OCT 27 1917
UNIV. OF TEX. LIBRARY

This Issue Exceeds 75,000 Copies

THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 15 Cents

Vol. LXIX, No. 17 | 535 North Dearborn Street, CHICAGO, ILL. | OCTOBER 27, 1917

CONTENTS AND DIGEST

The New Public Health. W. S. Rankin, M.D., Raleigh, N. C.....1391

Gross and analytic conceptions of the health problem. Federal, state and county cooperation in financing and planning rural health work. Industrial hygiene. Improvement in public health through advances in practice of medicine.

Discussed by Drs. Bracken, Rucker, Emerson and McCormack.

Experimental Shock. C. C. Guthrie, M.D., Pittsburgh 1394

Method of producing shock experimentally. Observation of the effects of drugs on the various functions.

The Value of Eye-Ground Observations in Recent Cases of Fracture of the Skull. J. A. Kearney, M.D., New York 1399

Increased intracerebral pressure usually the most damaging factor after fracture of the skull. Advantages of early diagnosis by ophthalmic fundus examination.

Syphilis of Bladder. H. A. Fowler, M.D., Washington, D. C.....1399

Dangers of syphilis of bladder. Three stages of syphilis of bladder. Case reports. Etiology. Secondary syphilis. Tertiary syphilis. Cystoscopic appearances. Treatment.

Discussed by Drs. Krotoszyner, Watterson and Fowler.

Nineteen Cases of Typhoid Fever Due to Eating Turkey Salad. Powhatan S. Schenck, M.D., Norfolk, Va....1402

Psychoses Other than Paretic Dementia in Syphilitic Individuals. Alfred Gordon, M.D., Philadelphia.....1403

Multiplicity and variability of syphilitic affections.

Discussed by Drs. Mayer, Woodson, Ball and Gordon.

Intravenous Glucose Injections in Shock. Joseph Erlanger, M.D., St. Louis, and R. T. Woodyatt, M.D., Chicago..1410

The low blood pressure in shock and its interpretation. The benefits of glucose injections, and how they may influence shock.

Symptomatology of the Nervous System in Chronic Intestinal Toxemia. G. Reese Satterlee, M.D., and Watson W. Eldridge, M.D., New York...1414

Classification of the symptomatology of the nervous symptoms: mental, sensory, motor and symptoms on the side of the sympathetic system.

Discussed by Drs. Verbrycke, Jr., Turck, Smith, Rosewater and Satterlee.

(Continued on next page)

MILITARY MEDICINE AND SURGERY

Pitching and Striking the United States Army Field Hospital. William W. Reno, M.D., Fort Riley, Kan.....1421

Medicomilitary Considerations of the Modern Military Bullet. Robert Booth Acker, M.D., Fort Stanton, N. M. 1427

MEDICAL MOBILIZATION AND THE WAR 1437

In Flanders' Fields.
Clinical Congress of Surgeons of N. A.
News of the Training Camps.
News of the Cantonments.
Disease Conditions Among Troops.
Orders to Officers.

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.
Next Annual Session, Chicago, 1918.
Copyright, 1917, by the American Medical Association.

SAUNDERS

Bulletin

25,600 VOLUMES

During September our bindery delivered to us 25,600 volumes. These were for immediate shipment to fill urgent orders in hand. While this is by far the biggest bindery delivery we have had in any one month, it did not appreciably relieve the pressure of demand. We are working night and day to serve the profession promptly.

Have you enlisted some of these books in your service?

JUST OUT—NEW (13th) EDITION

Anders' Practice

The extensive revision for this edition necessitated resetting the book entirely. The new matter added includes treatment of tetanus, acidosis in diabetes, chylothorax, etiology of aortic incompetency, treatment of asthma, diverticulitis, functional tests of hepatic insufficiency, Gaucher's disease, estimation of renal function, anaphylaxis of food intoxication, the pneumococcic infections, focal sepsis, rat-bite fever, febris Wolhynica, and pyorrhea alveolaris. The following subjects have been rewritten: Prophylactic vaccination, specific therapy in typhoid fever, specific therapy in tuberculosis, pellagra, splenic anemia, the arhythmias, intestinal toxemia, bacteriology of whooping-cough, hemolytic jaundice, and the section on diseases of the nervous system. A number of new diagnostic tables have been added.

Octavo of 1259 pages, illustrated. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine, Medico-Chirurgical College Graduate School, University of Pennsylvania. *Thirteenth Edition* assisted by John H. Musser, Jr., B.S., M.D., Associate in Medicine, University of Pennsylvania.
Cloth, $6.00 net; Half Morocco, $7.50 net.

SAUNDERS, *Publishers*

See Page 3

CONTENTS AND DIGEST—Concluded

A New Complement Fixation Reaction as Applied to Leukorrhea: A Comparative Study of Forty-Seven Cases. Louis D. Smith, M.D., and F. Lee Stone, M.D., Chicago.....1418

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Postoperative Dressing for Cholecystotomy. Charles H. Breuer, M.D., Lincoln, Neb. 1420

The Treatment of Urethral Caruncles by Fulguration. Edgar G. Ballenger, M.D., and Omar F. Elder, M.D., Atlanta, Ga. 1420

India Ink Infiltration: A Simple and Effective Substitute for Corneal Tattooing. F. H. Verhoeff, M.D., Boston 1420

Diluting Fluid for Counting Blood Corpuscles. Jacob Diner, M.D., New York 1421

Fracture of Ischium. Albert Franklin Tyler, M.D., Omaha.....1421

EDITORIALS

Acclimatization to the Tropical Sun 1430
Importance of diet and increased ability to perspire.

The Strength of Diabetics.....1431
Relationship between food tolerance and muscular vigor.

The Active Principle of the Hypophysis 1431
A substance not yet isolated as a chemical entity.

Fruit Acids.....1432
Occurrence of citric and malic acids in various fruits.

The Toxicity of Ultraviolet Light..1433
Conditions of the susceptibility of protoplasm.

CURRENT COMMENT

War Session of the Clinical Congress 1434
The aid of organized medicine in America's activities in the war.

The Chemical Structure of Nucleic Acid 1434
An important contribution to biologic research.

Unwise Economies in Diet.....1435
Prevention of a one-sided regimen by accessory factors.

Isolation of Tetanus Toxin.....1435
The attachment of tetanus toxin and of pancreatic ferments to particles under certain conditions.

The Control of Child Mortality in England.....1436
Relief of mothers who are unable to secure necessary assistance.

The Gastric Secretion in Infancy..1436
Presence of a secretion not neutralized in the stomach.

Primary Tuberculosis of the Tonsils 1436
Findings in tonsils removed from children.

MEDICAL NEWS

ARIZONA: New Members of Board of Examiners — Personal.....1451
ARKANSAS: Venereal Clinic 1451
FLORIDA: Hospital Site—Antituberculosis Campaign — Trachoma in Florida 1451
ILLINOIS: Diphtheria in Edwardsville — To Aid Tuberculosis Work in France — Personal — Tuberculosis Clinics. Chicago: Canadian Surgeon-General to Address Institute of Medicine 1451
IOWA: Personal 1452
MARYLAND: Personal — New Tuberculosis Hospitals Proposed — Meetings—Hospital Rates Increased 1452
MINNESOTA: Diphtheria at State Hospital — Southern Minnesota Physicians to Meet — Good Work at Sanatorium — Personal — New State Officers 1452
MISSOURI: Personal. St. Louis: Emergency Unit Organized — Cleared of Disloyalty Charge — Personal — Registration Subcommittee Appointed 1452
MONTANA: Hygienic Laboratory Opened—State Board Election — Hospital News 1452
NEW MEXICO: Personal — State Society Meeting 1453
NEW YORK: Centennial of Medical Society — District Society Meetings—New Adjustment of Medical Claims Under Compensation Act. New York City: Case of Anthrax at Bellevue —Harvey Lecture — New Brooklyn Hospital —Lectures on Skin Diseases — Anniversary Dinner of Pharmacy College — Ambulance Wrecked by Trolley — Psychiatric Changes —Free Clinic for Speech Defects—Hospitals Face Large Deficit — Medical Experiences at Camp Upton 1453
PENNSYLVANIA: Philadelphia: Veterinarians Mobilize — Jefferson Unit in New Quarters — Medical Club Nominations — Hospital Opens New Office — Personal 1454
VERMONT: New State Officers — Bennington County Physicians Elect Officers 1454
TEXAS: Quarantine Station — Personal — New Officers 1454
CANADA 1454
GENERAL 1455
FOREIGN 1455
LONDON LETTER 1455
PARIS LETTER 1457

MARRIAGES 1458

DEATHS 1459

PROPAGANDA FOR REFORM 1460
"Haines' Golden Treatment."

CORRESPONDENCE 1461
Efficiency Methods and the Physician's Work.
The Early Recognition of Multiple Sclerosis.
The Moral Obligation of the Intern to the Hospital.
"Experimental Pellagra."
"The Full Sacrifice."

QUERIES AND MINOR NOTES 1463
True Antiperistalsis in the Small Intestine.
Bruck's Serochemical Test for Syphilis.
Disposal of Commission on Receiving a Higher One.

MEDICAL EDUCATION AND STATE BOARDS OF REGISTRATION
Coming Examinations — Mississippi June Examination — Virginia June Examination — Wisconsin June Examination — Oklahoma July Examination 1464

MEDICOLEGAL
Business Corporation and Manager Giving Medicine — Meaning of the Terms "Physician" and "Medicine" 1465

SOCIETY PROCEEDINGS 1466
Coming Meetings.
American Association of Obstetricians and Gynecologists.
Colorado State Medical Society.
Indiana State Medical Association.

CURRENT MEDICAL LITERATURE

American Medical Journals

Immune Response in Renal Tuberculosis — Pulse Pressure Test of Cardiovascular System 1469
Acute Appendicitis—Coaguloreaction of Syphilitic Serum — Nervous Symptoms of Polycythemia Vera—Heat Stroke—Alpha Iodin in Chronic Heart Block.....1470
After-Treatment of Infantile Paralysis—Patellar Bone Graft in Knee Excision — Cerebrospinal Fluid in Poliomyelitis 1471
Surgery of Peripheral Nerves — Prevention of War Deafness — Gangrenous Balanitis—Cyanosis and Hyperpnea Seen in Pneumonia —Experimental Asthma in Guinea-Pig—Acute Death from Chlorin Poisoning 1472
Blood Picture Following Experimental Splenectomy 1473

Foreign Medical Journals

Infective Jaundice—Combined Vaccination with Multiple Vaccines 1473
Rupture of Left Bronchus from Trachea—Treatment of Vincent's Angina—Meningococcus of Weichselbaum—Intravenous Injection of Quinin in Malaria—Rectal Crises of Nontabetic Origin 1474
Treatment of Chest Wounds—Trench Fever Associated with Hemogregarine—The Development of War Surgery — Epinephrin in Addison's Disease—Suprarenal Functioning During Acute Infections 1475
Relapsing Fever in East Africa—Flies and Colored Lights — Preservatives in Foods—Silent Peritonitis and Sudden Death—Hot Foods as Factor in Dyspepsia.....1476
The Antirat Campaign — The Fight Against Tuberculosis—Immediate Extraction of Projectiles—American Medical Pioneers in Hygiene — Nerve Blocking Treatment of Causalgia—Diagnosis of Sciatica 1477
Open Pulmonary Tuberculosis — Traumatic Asthma—Clinical Picture with Asphyxiating Gases—The Eye Signs of Death—Treatment of Leg Ulcers—Differential Cell Count in Effusions—Poisoning from Rhubarb Leaves —The Ocular Lesions with Diphtheria.1478
Cholesterol in Culture Mediums—Tuberculosis at Rio de Janeiro—Hookworm in the Brazilian Navy — The Balantidium Coli in Argentina — Ichthyolized Petrolatum for Burns—Cheese in Infant Feeding.....1479
Isolation of Tetanus Toxin in Pure Form —Isolation of Ferments of Pancreatic Juice —War Fracture of the Femur—Segmental Sensory Innervation of the Hind Leg of the Cat—Depressions in the Skull as Sign of Rachitis 1480

TONICS AND SEDATIVES—BOOKS RECEIVED—THE PUBLIC SERVICE.....Adv. Page 20

PAUL B. HOEBER 69 E. 59th St., NEW YORK : : AMERICAN, ENGLISH, GERMAN, FRENCH **MEDICAL BOOKS**
We supply any Medical Publication, no matter where or when published.

A GOOD PAYING PRACTICE IS A BIG THING TO FIND A SMALL CLASSIFIED AD IN THE JOURNAL WILL DO THIS FOR YOU AT LOW COST

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXIX, No. 17 CHICAGO, ILLINOIS OCTOBER 27, 1917

THE NEW PUBLIC HEALTH *

W. S. RANKIN, M.D.

Secretary, North Carolina State Board of Health

RALEIGH, N. C.

My ambitious subject, the new public health, is not of my own choosing. A recent book has been devoted to a discussion of this subject. In attempting to deal with a subject of such vast proportions in the short period of time at my disposal, I shall be compelled to limit myself to brief references to those recent changes in point of view, new interests, and new proposals which seem to offer the biggest rewards for any attention that may be given to them.

GROSS AND ANALYTIC CONCEPTIONS OF THE HEALTH PROBLEM

Our former rather gross conception of the health problem is becoming more exact, more analytic. We are learning that the health problem has an anatomy; it can be cut up, dissected into a number of independent, smaller health problems or health units. The treatment one prescribes is profoundly influenced by one's point of view. It depends, namely, on whether one has the gross or the anatomic conception of the health problem. With the gross conception one prescribes general treatment and uses the shotgun prescription. His treatment is like the treatment of one who prescribes a physician for the sick, for he prescribes a health office or health officer for the health problem; as, for example, a national department of health for the national health problem, and a whole-time county health officer for the county health problem. With the anatomic conception one prescribes specific treatment, a definite plan for each separate health unit. The health officer with an exact conception of the health problem in treating a sick social organism does not put all of the treatment in one prescription, realizing that in aiming at everything he may hit nothing, and incidentally turn his patient's stomach. Today is the day of specific therapeutics, both for the individual and for the public. Specific therapeutics demands exact knowledge.

FEDERAL, STATE AND COUNTY COOPERATION IN FINANCING AND PLANNING RURAL HEALTH WORK

Two departments of the national government, those of agriculture and of commerce, have established a plan of financial and supervisory participation with state and county governments in local or county work in which all three participating governments have a common interest. Under this plan the federal government makes an initial appropriation of from $4,000,000 to $25,000,000 annually. This appropriation is apportioned to the states on the basis of population and square mile area, and each state apportionment becomes available when the state appropriates an equal sum. The state, in its turn, apportions the combined federal and state funds to those counties that will appropriate a supplementary fund, the amount of which the state determines. Note that all the appropriations, federal, state and county, are conditioned and are available for use only when two other appropriations are made. Such appropriations are comparatively easy to secure, one of the three contributors inducing the other two to contribute. In addition to providing funds for local work in which all three governments have a common interest, this plan offers another great advantage: before any county can receive state or federal aid, its plan of work must be approved by both state and federal participants. In this way the federal government and the state government become clearing houses of experience in formulating and directing local work.

This principle of governmental cooperation which the Department of Agriculture and the Department of Commerce have established for county agricultural work and county highway construction should be quickly extended to include county health work. A federal appropriation of a million dollars annually for rural health work, to be apportioned among the states on a basis of rural population and square mile area, and made available to the state appropriating a like sum, would give the average state $40,000 annually for rural health work. Then if the state apportioned the $40,000 to those counties that would match the combined federal and state fund dollar for dollar, the total fund in the state for rural health work would amount to $80,000 annually. Moreover, the conditions of the apportionments, in requiring the plan of rural health work to be approved by all three participating governments, would insure the highest degree of efficiency. In a recent conference of secretaries of state and provincial boards of health, appropriate steps were taken to secure from Congress the extension of the plan of financial and supervisory cooperation of governments to include, in addition to agriculture and good roads, rural health work.

INDUSTRIAL HYGIENE

Countries epitomize the course of civilization in being first agricultural and then, with an accumulation of raw products, becoming industrial. Our country is rapidly becoming an industrial nation. Multiplication of industries means that competition is sharpened by every new wheel that turns. Competition demands the elimination of waste.

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

Waste in industry results (1) from defective machinery, and (2) from defective manipulation of machinery. The successful industrial captain demands that only the best machinery be installed, that it be kept clean, polished, well lubricated, screws and bolts tight, belts well adjusted, and in every way physically fit. He does more. He looks beyond the machine and finds that a physically efficient machine in the hands of a physically inefficient operator means waste. He finds that from 40 to 50 per cent. of employees are sick or abnormal some time during the year. He finds that each abnormality, total incapacitation, is preceded and followed by subnormality, partial incapacitation, of from two to three weeks' duration; in short, he finds that the average worker is partially and completely incapacitated for about one twelfth of his time. He finds that accidents to both men and machines occur usually to those men and machines that are physically either subnormal or abnormal. He finds that the product of a machine suffers quantitatively and qualitatively when the machine stands idle as a result of an abnormal operator, or when the machine is under the manipulation of a subnormal operator, and so the need, the demand for industrial hygiene gains new strength almost daily. In supplying this demand, the great need is a carefully devised, detailed plan of industrial hygiene built up in units and made thereby adaptable to the more important industries of varying capitalization.

IMPROVEMENT IN PUBLIC HEALTH THROUGH ADVANCES IN PRACTICE OF MEDICINE

The medical profession conceived public health, fed the embryo from its own blood, brought forth the mature infant, which, though vigorous and promising, is even yet dependent on its mother's breast. Anything that strengthens the mother helps the child. In this country recently three proposals, health insurance, group practice, and a plan for more generally available postgraduate courses for physicians, have been put forward for the purpose of advancing public health by improving the practice of medicine. The first two of these proposals, health insurance and group practice, are being well cared for by able men.

Organized medicine has taken a deep interest in medical education, as medical education applies to the physicians of tomorrow; but in its solicitude for the undergraduate it has apparently forgotten the postgraduate, the present field force of something like a hundred thousand physicians. Modern governments do not appropriate money for road construction without providing in the act for the maintenance of the roads constructed. The solidarity of the medical profession depends on two conditions: (1) its construction, and (2) its repairs. The repair shops of medicine are sorely inadequate, and with a very few exceptions those that exist are not organized with proper consideration for the convenience of the men who should use them.

Eighty per cent. of the general practitioners get little or no postgraduate work. Their income is small, around $1,500 to $1,800 a year. They have family responsibilities, current expenses and insurance. The present cost of postgraduate work is in excess of what the general practitioner can pay. To make postgraduate work more generally available, one of two things must be done: either the income of the profession must be increased or the cost of postgraduate work must be decreased. In order to decrease the cost of postgraduate work, let us analyze its budget. Let us suppose, for illustration, that seventy-five physicians take a postgraduate course of six weeks in diseases of children under a capable assistant professor in one of our larger medical schools. The teacher has graduated three or four years previously, is an exceptionally well qualified man, and is one of the best of the younger men in the active teaching force. Let us assume that the physicians taking this course collect $150 a month from their practices. The individual expense account then will be:

Absence from practice six weeks	$225
Tuition six weeks postgraduate	100
Traveling, board and incidentals	75
	$400

For the entire class of seventy-five men, the cost will be seventy-five times $400, or $30,000.

Now let us suppose that we reverse the transportation process: Instead of moving seventy-five men away from their practice to one man, the teacher, let us move the teacher to the seventy-five men, leaving the men at work in their practices during their postgraduate courses. The seventy-five doctors can be grouped into six sections of from twelve to thirteen men. The sections can be so located with reference to each other that the teacher can meet Section 1 on Monday for an hour's lecture and two hours' clinic, travel a distance of from 20 to 30 miles, meet Section 2 on Tuesday for three hours' work, and so on, Section 3 on Wednesday, Section 4 on Thursday, Section 5 on Friday, and Section 6 on Saturday; and with the sections arranged on a circuit the teacher would be, on completing his week's work on Saturday with Section 6, within one hour of Section 1, with which on Monday he would begin again his weekly cycle. In a three months' course each section and each member of the class would receive twelve hours of lectures and twenty-four hours of clinics; or in a four months' course, sixteen hours of lectures and thirty-two hours of clinics. If we pay the teacher $600 a month for a four months' course, the teacher will receive $2,400; if we pay the teacher $800 a month for a three months' course, the teacher will receive $2,400, which is not bad pay, at least from the point of view of the general practitioner. If we allow an additional $600 for other costs, such as laboratory material, stenographic reports of lectures, etc., the total cost of the course to the entire class will be $3,000, which will be agreed on in advance and raised by assessments of $40 for each member of the class. The amount of clinical material needed can be prorated among the members of the class, who can furnish this material from their practices. The state university, the state board of health, or some other state agency of standing should assume responsibility and direction of the course. If the university should assume direction of the course, academic credits could be issued to those who satisfactorily complete the course.

There are only four elements that enter into postgraduate work: (1) a class room, (2) a class of from eight to fifteen physicians, (3) a qualified teacher, and (4) clinical material. In times past this combination could be effected in only a few large cities; but times change, conditions and environment change, and men, except the aged that have lost their adaptability, change. Improved railway facilities, excellent highways, the automobile, denser populations with more abundant clinical material, increase in number of physicians and decrease in space separating them, are fac-

tors that could be and should be utilized in the repair of the medical profession, in bringing mental sustenance to the men in the trenches, instead of sending them far back to a few base kitchens.

THE NEW IDEAL: VITAL QUALITY

In health work the old ideal was quantitative—more life, lower death rates, greater longevity. The new ideal will be qualitative—greater human efficiency, a better quality of being.

There was a time when mere quantity of service counted for more than it does today. Then we had a work day of twelve hours and a school day of eight or nine hours. Now we know that a man's ability to produce and a child's ability to learn is greater with an eight hour work day and a five hour school day than with the former longer hours. The time may come when we shall find that a life adjusted to a fifty year time table makes greater mileage on the energy consumed than does a life adjusted to a seventy year time table.

Quantity of life and quality of life are related, but are not identical. If we provide for quantity we do not necessarily insure quality. If, on the other hand, we provide for quality of being, we take care of quantity so far as it deserves to be cared for. With the old ideal of vital quantity, those diseases that have large mortalities and high degrees of preventability tended to absorb our thought and energy. With the new ideal of vital quality, we shall be not less mindful of those diseases that directly affect vital quantity, but we shall be more mindful of those diseases that play havoc with vital quality. The light hookworm infection; twenty to fifty parasites; the neutral malarial infection; the chronic suppurating gums; the chronic constipation; the grumbling gallstones; the nagging piles; the old, slightly lacerated cervix; the improperly balanced ration; the excess of nicotin; the improperly ordered schedule of rest and play and work; these, and their like, gage the severity of their attack on vitality by what the vital forces will tolerate without striking back. These, like the small tax gradually increased over long years, take from a careless people a total of efficiency, of vital quality, of life, that, could we but compare it with our account against tuberculosis, typhoid fever, and their like, would make the last named diseases appear of far less relative importance. Our vital losses, like our financial losses, are in driblets, pennies, nickles, dimes, an occasional quarter. If these little drafts on efficiency, on vital quality, the individual items too small to add from day to day, were totaled at will-making time, our conception of the relative importance of diseases would undergo a rather remarkable revision. Periodic examination of adults, as carried out by the Life Extension Institute; medical inspection of schoolchildren; school lunches; the accentuation of the fight on diseases that cripple rather than kill, hookworm and malaria; the oral hygiene movement; the mental hygiene movement; the propaganda of the eugenist; the increased interest in the regulation of working hours, in dietetics, are all aimed not primarily at death rate reduction and longevity extension, quantity, but at the new ideal, a finer quality of being. For

> We live in deeds, not years; in thoughts, not breaths;
> In feelings, not in figures on a dial;
> We should count time by heart throbs. He most lives
> Who thinks most, feels the noblest, acts the best.

ABSTRACT OF DISCUSSION

DR. H. M. BRACKEN, Minneapolis: Dr. Rankin has given us a most interesting paper, illustrating the work that is already being done in North Carolina relative to (1) organization of county boards of health, and (2) postgraduate teaching. Both of these are of the greatest importance. Dr. Rankin is to be congratulated on what he has been able to do, as well as on the able way in which he has presented his subject. It is to be hoped that others may follow his example. The plan which he has developed for postgraduate work is unique, but seems to be efficient.

DR. W. C. RUCKER, Washington, D. C.: Last year at Cincinnati I defined health as the physiologic function of the community. This caused a little smile to ripple over the face of things; but, after hearing this paper, I am convinced more than ever that this definition is correct, and that health is the physiologic functioning of the community. In our health teaching heretofore we have taken the wrong course, the illogical way, of going about it. We have reasoned from the pathologic to the physiologic instead of taking the point of view that the normal is the physiologic.

Judged in that way, we get far away from the idea that the whole problem is a communicable disease problem, and realize that it is a community problem. In this problem we must recognize two sets of workers: the general practitioner and the group of people whose practice is limited to public health work, or sanitation.

This gives us an opportunity to give different sorts of training. We should give the same basic training to all; but to the man whose practice is to be limited to sanitation, we should give intensive training along certain definite lines, developing each man according to his special capabilities for special lines of work. With regard to the school curriculum, to the postgraduate course, it seems to me that there is one psychologic factor that should be borne in mind, and that is that when men gather together in a new environment for the purpose of accomplishing something, they can do that something better than they could in their normal environment.

DR. HAVEN EMERSON, New York: In paying tribute to Dr. Rankin's admirable conception of the opportunities that await postgraduate education in public health matters, I wish to emphasize the fact that failure of the practitioner at present is due to the failure of medical schools to appreciate that the teaching of diagnosis and care of the individual is not the sum of their responsibility to their students. Rarely is a student's attention called to his responsibilities to the community in fulfilling his obligations to patients. There is no reason why the local health officer should not play a part in the postgraduate teaching of clinicians and physicians just graduated from hospitals.

We are now in the presence of the phase of public health work which recognizes that the habits of the community, and the education in personal hygiene of the individual will be the determining factor in further improvement of public health. Health officers must become teachers, so that the people will know how, when they are healthy, to keep healthy. They must spread the newer knowledge of physiology; the knowledge that alcohol is not a stimulant but a depressant; the knowledge that the best preventive against venereal disease is personal continence, and the knowledge that continence is compatible with health. I believe that we could proceed in this matter without waiting for governmental appropriation, and that it needs merely cooperative organization between existing medical schools and the health officers, in order to put into effect a program for postgraduate public health instruction of clinicians.

Ultimately, this teaching work should be paid for by government subsidy or by the medical school; but volunteers could doubtless be obtained to put the plan into operation, with confidence that support would come as its value was recognized.

DR. ARTHUR T. MCCORMACK, Bowling Green, Ky.: Dr. Rankin has put into practice plans and thoughts which have suggested themselves in part to many of his fellow workers. He has actually done what others have dreamed of. Congress

at its last session made an appropriation of $150,000 to be used for cooperative work with the states, on the dollar for dollar basis, in rural sanitation. To my mind this really activates the United States Public Health Service; and, regardless of whether we have a cabinet officer now or later, it gives us a federal health service that will be enabled to standardize county health departments so far as this is possible. A county which expends $5,000 annually on its health department will now be able to secure a sanitary survey of every home and individual in its borders by trained medical officers. Such a health inventory will enable the health officer and his corps to know what problems should be solved first and to adopt a compresensive, economical plan for such solution. Such a survey will do more for the education of all the people of a county than can be accomplished in a generation by other means. The careful sanitarian, made practical by experience, who goes to the home and takes up the details of ordinary life, answers questions, and tactfully points out defects and at the same time demonstrates the remedies for these defects, is the real apostle of health.

Dr. Rankin emphasizes the evolution going on in all of us, and Dr. Emerson well says that the local health department must concern itself with every single thing that goes to make a better citizen for that community. It was but recently that we all felt that an all-time health officer was the "ultima Thule" of our desires. Before we have secured him, we know that, alone, the most devoted all-time health officer will, in many counties, be wholly inadequate. What we must have is an all-time county health department, with such force and such allies as are necessary to prevent sickness and restore those who are inefficient.

EXPERIMENTAL SHOCK *

C. C. GUTHRIE, M.D., Ph.D.
PITTSBURGH

In view of the desirability of prompt publication of results in this field, as indicated recently by Pike,[1] a summary of work conducted by the staff members of this department and extending over a number of years[2] is deemed timely.

The general plan was to devise a reliable and comparatively simple method of producing shock; to establish definite criteria for recognizing the condition and to observe and study (quantitatively when possible), at frequent intervals throughout the experiment, as many phenomena simultaneously as was feasible, for we were proceeding on the assumption that the grosser manifestations of shock are to be considered effects rather than causes. Accordingly, if the causative mechanism was to be observed, it would be most desirable to study minutely the phenomena immediately preceding, during and following the application of the means used for producing shock, and to observe the effects of such therapeutic measures as might be indicated by the results.

Such experiments were made on twenty-two dogs. The studies comprised blood pressure; pulse rate and character; vasomotor reflex response; vasomotor tone; respiration rate, amplitude and regularity; volume and composition of expired air; blood hydrogen-ion concentration, reserve alkalinity, hematocrit and hemoglobin tests, red cell count and specific gravity determinations (from which alterations in the composition of the blood, as regards relative volumes of plasma and corpuscles, as well as estimations of relative changes in total volume of blood, were made); estimation of the total blood contained in the vessels of the alimentary canal and in the vessels of the liver; viscosity and depression of the freezing point of blood, and temperature and condition of the general reflexes (eye, knee, etc.). Comparative studies were made on conditions observed in shock, and conditions following induction of cerebral anemia. The effects of remedial measures were observed, as mechanical increase of cerebral pressure, by occluding the aorta; elevation of the posterior portion of the animal to facilitate return of blood to the heart, and administration of drugs, including epinephrin, tyramin, atropin, sodium bicarbonate, lactic acid, and inhalation of carbon dioxid.

METHOD OF EXPERIMENTATION

After such observations had been made as were possible on the unanesthetized animal (condition, general behavior, pulse and respiration), it was quickly reduced with ether to a state of surgical anesthesia, and operated on. A trachea tube was inserted and connected with an ether bottle provided with valves. Connections were provided for collecting expired air samples for analysis. A mercury manometer was connected with one carotid artery for recording blood pressure. Blood samples were obtained by means of a cannula inserted into a carotid or a femoral artery.

After the taking of observations, including tracings and samples of air and blood to establish the condition under ether only, the brachial plexus on one or both sides was exposed, ligated and cut peripheral to the ligature and further stimulated by traction, or crushing with forceps, and by tetanizing electric currents. One or both sciatic nerves were prepared for stimulation chiefly to observe vasomotor reflex response. Unless pronounced symptoms of shock were soon induced, one or both of the fore limbs were about three fourths amputated, or the abdominal cavity was opened by a median incision and the intestines exposed and manipulated. The rectal temperature was taken at intervals. Ether was discontinued as early as possible, but was readministered, if indicated, to prevent return of conscious sensibility. Cerebral anemia was induced by the occlusion of appropriate arteries.[3]

RESULTS

Circulation.—Blood Pressure: This showed marked variations under experimental procedures. With pronounced evidences of shock, there was always low blood pressure. Usually, when below 70 to 50 mm. under ether, a tendency to recover was absent, but on removal of the ether, recovery was prone to take place, while from levels between 50 and 40 mm., the tendency to recover on removal of ether was feeble or absent. From the 50 to 40 mm. level, in general, the tendency of the blood pressure was gradual decline, but the rate of decline varied in different animals.

In pronounced shock, tying the portal vein, or tying the vein and the arteries supplying the alimentary canal and liver, had small effect on the blood pressure. Elevating the posterior trunk in such conditions caused a marked rise in blood pressure, and the effect was not materially lessened if, prior to elevation, the portal vein was ligated.

---

* From the Laboratories of Physiology, Pharmacology and Physiological Chemistry, University of Pittsburgh School of Medicine.

1. Pike, F. H.: The Relation of Low Blood Pressure to a Fatal Termination in Traumatic Shock, The Journal A. M. A., June 23, 1917, p. 1892. (Discussion of references does not come within the scope of this communication, but some are included for the convenience of the reader, who may desire to refer to other literature.)

2. Guthrie and Guthrie: Proc. Soc. Exper. Biol. and Med., 1914, **11**, 148.

3. Stewart, Guthrie, Burns and Pike: Jour. Exper. Med., 1906, **8**, 289.

Pulse, Rate and Character: The pulse in general varied with the blood pressure, and as pressure declined, the total effect on the pulse rate was a decrease as compared to the stage under ether only. There was no pronounced evidence of vagus inhibition.

As indicated by the manometer tracing, the character of the pulse showed variations associated, as a rule, with pressure changes and due, it is believed, to a large extent to mechanical alterations, as the blood supply to the heart, changes in peripheral resistance, and rate of heart. The pulse became weaker with lower pressures with a noticeable tendency, as compared to the stage under ether only, to become slower.

Vasomotor Reflexes: Reflex vasomotor augmentation varied in different experiments and also in the same experiment. In some instances it was diminished, and in others it was more pronounced in the lower stages of blood pressure. Its occasional absence may have been due to the ether factor. Under strong brachial nerve stimulation, augmentation was followed usually by diminution of blood pressure.[4] The diminution, too, varied in different experiments, and in different stages of the same experiment.

Vasomotor Tone: The vasomotor tone results were pronounced. For example, in one experiment under ether only, division of the sciatic nerve increased the blood flow from the femoral vein 22 per cent., while after shock in the same animal, the increase amounted to 76 per cent. In another experiment, the increase in shock after division of the nerve was 77 per cent. Hence, it would seem that vasomotor tone was present in the limb in shock, which confirms again the findings of Seelig and Lyon.[5]

Blood.—Reaction: The hydrogen-ion concentration of the blood showed a tendency to increase. For example, in one experiment, before shock the hydrogen-ion concentration was 7.2, and after shock 7.1, and in the final stages 7.0. In another experiment, under light ether only, it was 7.2, and under deep ether only, 7.0, and after shocking the animal it remained at 7.0. It would seem, therefore, very important to consider the anesthetic factor in interpreting such results.

Reserve alkalinity seemed to bear a closer relation to shock than hydrogen-ion concentration. In one experiment, reserve alkalinity decreased from 8.0 to 7.8 in the early stage of pronounced shock, and as the degree of shock increased, reserve alkalinity decreased to 7.1. In this experiment, reserve alkalinity before shock was 8.0, in pronounced shock 7.3, and in the very late stages 7.1. The hydrogen-ion concentration in this experiment increased from 7.2 to 7.0.

Hydrogen-ion concentration determinations were made by the Levy, Rowntree and Marriott method,[6] and reserve alkalinity by Marriott's method.[7] The figures obtained are taken as showing relative rather than absolute values.

Hematocrit, Hemoglobin, Red Cell Count and Specific Gravity: The relative volume of corpuscles (by hematocrit and by gravity sedimentation) hemoglobin (by Duboscq colorimeter method), number of red blood corpuscles per cubic millimeter, and specific gravity (by weighing) all showed a moderate progressive decrease. In a typical experiment, the hematocrit reading decreased from 64 per cent. before shock to 56 in the later stages; the hemoglobin, from 100 per cent. to 80.9 per cent.; the red cell count showed a decrease of about 25 per cent.; the specific gravity, from 1.068 to 1.062.[8]

Relative Blood Volume: As estimated from hematocrit, hemoglobin, red cell count and specific gravity results, there was a progressive increase in relative blood volume.[9] In the experiment quoted in the preceding paragraph, the following figures were obtained: volume of blood before shock, 100 per cent.; volume of blood in profound shock as estimated by hematocrit, 114 per cent.; by hemoglobin, 124 per cent., and by specific gravity, 119 per cent.

Distribution: In profound shock, the veins and the arteries of the alimentary canal, including those of the stomach and the small and large intestines, the pancreas and the spleen, were ligated, and after the removal of the vessels from the body, the blood was obtained by perfusing them with salt solution, and the total quantity was estimated (colorimetrically). Compared to the total blood (estimated by taking one fifteenth of the body weight), in two animals, the amount was found to be less than one seventh of the total. The amount of blood contained in the liver was less than one ninth of the total.[10]

Viscosity: Viscosity of the blood (defibrinated) showed a small progressive decrease.[2]

Depression of Freezing Point: The freezing point showed small and not significant changes.[2]

Respiration.—Rate, Amplitude, Regularity and Volume of Expired Air: In general, the total effect on the respiratory rate was a decrease from the rate under ether only. The decrease became more pronounced in the later stages of profound shock. Reflex augmentation was greater in the earlier than in the later stages. Under prolonged nerve stimulation, the reflex effects gradually diminished. The anesthetic factor renders it difficult to draw definite conclusions in all cases.

Amplitude varied in different stages of shock, and variations associated with reflex stimulation of the respiratory center introduced irregularities both of rate and of amplitude. In general, in the later stages of shock there was an increase in the amplitude, that is, depth of respiration.

With sudden onset of shock the respiratory sounds became softer. This may be associated with a change in the volume of tidal air, or with a change in inspiratory or expiratory time. In the later stages, irregularities became more pronounced, and not infrequently a type of irregularity consisting of alternate deep and shallow movements, often of group form, occurred. A type of respiration was observed in which there was a pronounced and prolonged inspiratory pause. In another type, inspiration was prolonged without much change in rate of expiration.

The volume of expired air of course varied with the rate and the amplitude. The total effect varied in different experiments, but in general, there was a decrease in the later stages.

Volume of Oxygen Retained and Carbon Dioxid Produced: The volume of oxygen retained varied greatly, not only with variations in anesthesia, nerve stimulation, etc., but also in shock, as compared to the

4. Porter: Am. Jour. Physiol., 1907, **20**, 399.
5. Seelig, M. G., and Lyon, E. P.: The Condition of the Peripheral Blood Vessels in Shock, THE JOURNAL A. M. A., Jan. 2, 1909, p. 45.
6. Levy, R. L.; Rowntree, L. G., and Marriott, W. M.: A Simple Method for Determining Variations in the Hydrogen-Ion Concentration of the Blood, Arch. Int. Med., September, 1915, p. 389.
7. Marriott, W. M.: A Method for the Determination of the Alkali Reserve of the Blood Plasma, Arch. Int. Med., June, 1916, p. 840.
8. Lockhart, Mummery and Symes: Jour. Physiol., 1907, **36**, 15.
9. Henderson, Yandell: Am. Jour. Physiol., 1910, **27**, 163.
10. Janeway and Jackson: Proc. Soc. Exper. Biol. and Med., 1915, **12**, 193.

stage under ether only. In different animals, under ether only, it varied greatly. This was true also in shocked animals. In general, in deep ether anesthesia, there was a decrease in oxygen retained. It seems that such variations are incidental rather than causal.

Carbon dioxid production varied greatly but not quantitatively with oxygen. Remarks on oxygen in general apply to carbon dioxid, including decreased production under deep anesthesia.

In harmony with the statements concerning oxygen and carbon dioxid, the respiratory quotient showed great variations.

Temperature.—There was gradual decrease in temperature, in some cases amounting to from 3 to 5 degrees, but there was no evidence of a direct relationship to shock.[11] Good recovery from shock was obtained after the temperature had decreased more than 3 degrees.

General Reflexes.—The chief somatic reflex observed was the eyelid to touch of the conjunctiva. In profound shock, after the discontinuance of ether, this reflex was maintained even at very low blood pressure levels. Other reflexes were rarely permitted to appear.

Cerebral Anemia.—Studies of cerebral anemia in relation to shock were made indirectly by comparing the condition in shocked animals with the condition induced through decreasing the circulation to the brain and upper cord; by comparing the effect of restoring or accelerating the cerebral circulation, on the manifestations in the two conditions, and by comparing the results obtained by administering drugs. We are not able to differentiate sharply between the ultimate condition induced through nerve stimulation and general tissue trauma, on the one hand, and the condition induced through interruption of cerebral circulation, on the other. Likewise, restorative measures led to very similar changes in the two conditions, for example, reestablishment or acceleration of cerebral circulation led to recovery of, or improvement in, cerebral function if instituted not too late. Such results followed restoration of cerebral circulation either by mechanical means, as aortic occlusion, or raising the general blood pressure, as by intravenous administration of epinephrin solution. In either case, drugs exhibiting potency only through action on the higher nervous tissues are inefficacious.

In two instances showing profound symptoms, one induced through nerve stimulation and trauma only, and the other associated with cerebral anemia produced by arterial occlusion, the pons, medulla and upper spinal region were kindly examined by Professor Klotz for fat emboli, with negative results.[12]

Remedial Procedures.—In shock of moderate degree under ether, prompt recovery was obtained on discontinuance of ether; but in severer grades this did not suffice. Elevation of the posterior portion of the animal to facilitate the return of blood to the heart led to recovery, but it was more efficacious when coupled with temporary aortic occlusion.

In profound shock, epinephrin in salt solution administered intravenously has promptly increased the general blood pressure, accompanied by improved action of the bulbar centers, particularly that of respiration. Gradual and prolonged administration of the drug would seem to offer advantages over intermittent injections in that recovery of cerebral function is more successful with a more evenly maintained arterial pressure than is the case with intermittent injections. Intra-abdominal administration had but slight effect.

Tyramin, intravenously, gave results that were disappointing. In magnitude, the effects were less than in unshocked animals.

With atropin only a mild stimulating effect on respiration was obtained, which was due presumably to direct action, as there was scarcely any effect on blood pressure. Such action, however, is not considered beneficial, as the center rapidly became exhausted.

A beneficial influence was obtained with sodium bicarbonate intravenously in that there was some rise of blood pressure,[13] but this was not of sufficient magnitude to establish an adequate cerebral circulation.

With lactic acid intravenously, contrary to expectation, slight beneficial effects were obtained, similar in character to those observed with sodium bicarbonate.

Administration of carbon dioxid by inhalation in profound shock was without beneficial action. Theoretically, in much earlier stages it is possible that it might be of benefit, that is, if administered at a time when the centers were capable of response to stimulation without immediate exhaustion.

Though observations with some of the drugs are too limited in number for final conclusions, we are strongly impressed with the greater promise of epinephrin than with any of the other drugs studied. Preventive studies were not undertaken, owing to the great variations in susceptibility of different animals.

COMMENT

Shock in man may be classified as (1) psychic, (2) traumatic, (3) psychotraumatic and (4) surgical. The fourth type is merely the first, second or third plus the anesthetic factor. In the dog the psychic factor is small or nil, the second and fourth being the predominant types, that is, traumatic or, as in these experiments, ether plus trauma.

Susceptibility varied greatly in different dogs. Some animals readily succumbed to brachial nerve stimulation alone; others only when nerve stimulation was combined with opening of the abdominal cavity and visceral manipulation; while others were highly resistant under both methods. Corresponding with this, the tendency to recovery on discontinuance of the stimulation was very different in different animals. In general, the more vigorous animals have been most refractory.

The anesthetic factor was most difficult to evaluate in interpreting the results. Since full surgical anesthesia was maintained until the condition of shock was pronounced (as judged by low blood pressure, etc.) the interpretation of all results up to this point involves consideration of this factor; and, since in no instance an animal was knowingly permitted to regain consciousness to pain, experiments in which recovery tendencies were pronounced and it was necessary to readminister ether were complicated even further by this factor. It is most important to maintain a uniform anesthesia, and in some of the animals this was not realized to the same degree as in others, owing to individual differences.

11. Kinnaman: Internat. Jour. Surg., 1904, p. 378.

12. W. T. Porter (Boston Medical and Surgical Journal, 1917, **176**, 248, 699) has studied the relation of fat embolism to traumatic shock, particularly when associated with fracture of bones.

13. Seelig, Tierney and Rodenbaugh: Am. Jour. Med. Sc., 1913, **146**, 195.

Not all of the animals exhibited unequivocally the condition of surgical shock. This question is difficult to discuss owing to the variety of views as to the picture of such experimental shock.

Surgical shock in man, typically at least, is an easily recognized entity. In the dog, as it occurs in regular surgical work, it is also very definite, though the impressions one receives are more intense in certain cases than in others. This is probably due to the suddenness with which it develops, sometimes it being very acute and pronounced, and again of slow onset. In the acute type, which has been observed to develop with great suddenness and intensity in operations involving one brachial plexus, death may occur within a very short time, that is, less than an hour; while in the type of slow onset, the first intimation may be what appears as undue prolongation of recovery from the anesthetic. An animal in this condition may live for some hours. After being once observed, both types are readily recognized. It was the acute type we tried to induce, and in some instances succeeded beyond question. As it was not feasible to prolong the experiments, the animal, if it did not succumb within a few hours, was killed with ether; in the case of refractory animals, therefore, we cannot say that a fatal type of shock was produced.

We are inclined to consider two grades of shock as having occurred in these experiments, one associated with the characteristic clinical manifestations, particularly a marked and persistent lowering of blood pressure, but with a pronounced tendency to recover on discontinuance of the anesthetic; and the other characterized by more profound symptoms, including a persistently lower blood pressure level with no tendency to recover on removal of the anesthetic. As previously indicated, it would perhaps be better to speak of this condition, at least its later stages, as collapse.[14]

Results indicate that both reflex augmentation and diminution of blood pressure may be greater or less either actually, or in terms of per cent. of blood pressure, after the pressure has been lowered by means applied with the view of inducing shock. Even when the blood pressure has reached a comparatively low level, augmentation or diminution may be obtained by sensory nerve stimulation. But it is well to note that the data do not permit differentiation between effect due to action on bulbar centers, and possible effect due to action on peripheral or accessory centers.

Neither is it possible to analyze closely the factor of "automatic" vasomotor center activity or tone; but direct inspection of the splanchnic vessels clearly revealed at least a moderate state of engorgement in shock, which would indicate lack of vascular tone in this region. The engorgement was not maximal, as was shown by increased redness on handling the intestines; therefore some vascular tonicity must have been present; or an active process of dilatation, or paralysis, was induced through handling. We have confirmed Seelig and Lyon's[5] observation that an increased venous blood flow from a limb of an animal in shock follows section of the sciatic nerve. But this fact, as pointed out by Bartlett,[15] does not prove that the degree of activity of the vasomotor center is greater in shock.

It is known from studies in cerebral anemia that the resistance and recuperative powers of the respiratory and vasomotor centers are quite similar.[16] And even though not identical in these respects, it is perhaps permissible in the absence of more direct observation approximately to judge of central vasomotor activity by the state of the respiratory center. From this standpoint, it would seem that in profound shock probably the vasomotor center is in a state of deranged functional activity, grossly comparable to the derangement of the respiratory center. In this connection certain other considerations should receive mention, as the similarity of sensitiveness of the respiratory and vasomotor centers to sensory nerve stimulation and their similar susceptibility or resistance to fatigue under such conditions. A point of particular interest is the gradual disappearance of augmentation under prolonged sensory nerve stimulation. Whether this is due to fatigue or other form of interference with conduction, or to other form or forms of mechanism, is not clear; but it is an interesting fact that under such conditions, stimulation of another afferent nerve may affect activity of both respiratory and vasomotor centers. These observations, we believe, furnish additional support for the view that, grossly speaking, under such experimental conditions, activity of the respiratory center may be taken as an approximate index of vasomotor activity. The greater functional development of peripheral vasomotor regulating mechanisms is another possibility to be taken into account.

Though reserve alkalinity in certain cases showed a marked decrease, it is by no means certain that in all cases there was a material decrease prior to the onset of pronounced manifestations of shock. The results indicate that much of the decrease observed occurs after pronounced symptoms have become manifest. For example, in one experiment, in the early stage of pronounced symptoms of shock, there was a decrease from 8.0 to 7.8, while in a late stage the decrease had continued to 7.1. That good recovery of cerebral function was obtained (by aortic occlusion) without changing the values for hydrogen-ion concentration or reserve alkalinity is strongly indicative that the cerebral manifestations of shock are not due to change in blood reaction.

Physical measurements of blood, including viscosity and depression of the freezing point, did not reveal alterations of a kind or magnitude considered sufficient to account for shock phenomena. The alterations observed were probably associated with hemorrhage due to withdrawal of blood samples; for example, entrance of lymph, and other experimental conditions, such as decreased renal activity.

The basis of calculating blood volume changes was the relative proportion of corpuscles to plasma, and the results are expressed in terms of per cent. of the volume at the time of taking the first sample. The figures when corrected for the blood lost through hemorrhage indicate, as a rule, an actual increase in total blood volume.

The recovery of less than one fourth of the estimated total blood from the engorged vessels of the alimentary tract and of the liver does not indicate that serious pooling of blood occurred in these areas. Also, the fact that with low blood pressure, marked improvement was obtained in return of blood to heart on elevation of the posterior portion of the animal after the portal vein had been ligated, supports this

14. Guthrie, C. C.: Blood Vessel Surgery, 1912, p. 344.
15. Bartlett: Jour. Exper. Med., 1912, **15**, 427.
16. Stewart, Guthrie, Burns and Pike: Jour. Exper. Med., 1906, **8**, 289. Guthrie, C. C.: Blood Vessel Surgery, 1912, p. 318.

view. The inadequacy of cardiac massage alone in raising pressure in such conditions, and the efficacy of aortic occlusion only, indicate that low pressure is not due to cardiac muscular inefficiency; while the prompt and marked increase in pressure following elevation of the animal's hind quarters with the portal vein ligated indicates that low pressure is associated with decreased cardiac output, and that pooling of blood is not due necessarily to portal stagnation.

Respiration studies showed such variations and irregularities that it is not possible to make satisfactory generalizations. Attempts to determine the carbon dioxid tension in alveolar air were abandoned owing to lack of a satisfactory method of obtaining samples.

Temperature did not appear to be a causative factor. In all cases the total effect was a gradual decline. Pronounced shock was obtained when the decline was but a fraction of a degree. On the other hand, good recovery was observed after the temperature had decreased several degrees. Probably temperature change was incidental largely to experimental procedures (exposure of animal, etc.) rather than causative of shock. Good tendency to recovery exhibited with lowered temperature substantiates the correctness of this view.

As pointed out by Pike,[1] it is improbable that levels of blood pressure observed in shock would in all cases alone account for the condition apparently due to cerebral anemia. But in such experiments, activities of the central nervous tissues and hence their circulatory demands are increased, as by sensory nerve stimulation.[17] Therefore, it is difficult or even impossible in a given case to state that the tissue circulatory demands are being met even with only comparatively low blood pressure. From this standpoint, the evidence indicates fatigue of the nervous tissues as a causative factor of considerable magnitude.

One experiment was particularly interesting as illustrating this view. Although one carotid artery was not occluded, the symptoms were induced quickly, and simulated those of profound and fatal shock, including the late presence of eye reflex. This is interpreted as due to relatively greater anemia of bulb than of higher brain, which would explain the longer persistence of the eye reflex as compared to the results obtained by a more uniform decrease of cerebral circulation. Indirectly, it substantiates the view that the interpretation of the persistence of the eye reflex in shock at a time when bulbar centers show marked derangement, in comparison with its rapid disappearance on sudden occlusion of all cerebral arteries, is probably due to lessened resistance of the bulbar centers to anemia through stimulation resulting in their greater fatigue.[18]

SUMMARY AND CONCLUSION

We are inclined to attribute the earlier stages of the condition termed shock, observed in these experiments, largely to degradation and fatigue of the bulbar centers due to ether poisoning, and to sensory nerve stimulation; and the more profound stages, to inadequate circulation to meet the bulbar tissue demands.

Though all of the blood circulatory phenomena are closely related and interdependent, perhaps the lowered capillary pressure and hence the sluggish return flow of blood to the heart, rather than chiefly venous dilatation, is a more comprehensive standpoint from which to picture the condition in shock. Among probable early derangements augmenting the condition are vasomotor changes affecting venous tone.

Treatment when instituted in the earlier stages yielded good results; in later stages, results were less satisfactory, owing presumably to irreparable injury to the central nervous system.

Therapeutic measures capable of restoring an adequate cerebral circulation, instituted before irreparable tissue injury had occurred, led to recovery. Such measures should be preferably of a mechanical nature, as elevation of the posterior parts of the body, with the view of increasing a return of blood to the heart and adding a hydrostatic factor to the cerebral blood pressure; increase of peripheral resistance as by aortic compression; and particularly when associated with severe hemorrhage, increase of blood volume by transfusion of blood or the intravenous injection of isotonic nontoxic solution, as sodium chlorid.

Theoretically, and from the standpoint of increase in blood volume only, injection of hypertonic solutions would be indicated. The recent observations of Sansum[19] on the marked increase in arterial blood pressure associated with and following intravenous injection of strongly hypertonic glucose solutions are suggestive.

Temperature, if low, should receive attention. The main indication, however, is promptly to institute and to maintain an adequate cerebral circulation.

In the case of drugs, the best results have been obtained with epinephrin solution intravenously. Drugs should be selected with the view of increasing the peripheral resistance and augmenting the return of blood to the heart by direct action on the blood vessels.

We believe that these considerations of treatment, with added considerations to meet the psychic factor, apply to shock in man. For example, as previously discussed,[20] in acute psychic shock, inhibition probably plays a leading rôle. In the series of experiments herein reported, there was little evidence that inhibition was a factor.

17. Ryan and Guthrie: Quar. Bull. Med. Dept. Washington Univ., 1908, **7**, 58; Am. Jour. Physiol., 1910, **26**, 343; Guthrie, C. C.: Blood Vessel Surgery, 1912, pp. 104, 135.

18. Since this was written (July 6, 1917), additional experiments afford evidence supporting this view.

19. Sansum, W. D.: Rapid Reduction of Intra-Ocular Tension in Glaucoma, The Journal A. M. A., June 23, 1917, p. 1885.

20. Guthrie, C. C.: Blood Vessel Surgery, 1912, p. 345.

Free Dispensaries and the War.—At the annual meeting of the American Hospital Association at Cleveland, September 14-18, in discussing the effect of the entry of hospital and dispensary interns into the military medical service, a number of hospital superintendents intimated that the work of their institutions would have to be curtailed. It was indicated that this matter is being brought to the serious attention of hospital authorities. The idea was combated by authoritative speakers who argued that the special needs of war times called rather for an extension of their work in the communities. The discussions revealed that the idea of pay clinics for people of moderate means is making gradual headway in the hospital world. A new development of the dispensary idea is the establishment of special clinics for treating accidents under the state workmen's compensation laws. Under these laws, with the liability of the employers for the medical care of the injured workmen, the hospital will transfer to the new self-supporting clinic, in which the medical staff is paid, a large amount of work which was formerly done free in the hospitals. It was said that the largest clinic, that at the New York Hospital, last year had a gross income of $35,000, and that of the Pennsylvania Hospital in Philadelphia, $10,000. It was the sentiment that these pay clinics for general surgical work will spring up rapidly in all states having workmen's compensation laws.

THE VALUE OF EYE-GROUND OBSERVATIONS IN RECENT CASES OF FRACTURE OF THE SKULL

J. A. KEARNEY, M.D.
Adjunct Professor of Ophthalmology, New York Polyclinic Medical School and Hospital
NEW YORK

A rise in the intracranial pressure above normal as the result of cerebral hemorrhage or edema is usually one of the most damaging factors in cases of recent fracture of the skull.

While it is interesting to know the nature and extent of the fracture revealed by the roentgenograms, it is not as important from the standpoint of immediate treatment as the determination of an increased intracranial pressure, and this is frequently foreshadowed quite early by edematous changes noted in the fundus of the eye.

In three patients of the series studied, roentgenoscopy revealed a distinct fracture of the base of the skull with no signs or symptoms developing other than those following an ordinary concussion. Some of the cases of basal fracture, in which an extensive hemorrhage occurred from the ear at the time of injury (virtually a "natural" decompression), developed none of the signs or symptoms of an increased intracranial pressure.

Observations were made in 212 cases that were diagnosed as fracture of the skull in the service of Prof. William Sharpe, at the New York Polyclinic, with whom I have studied the eye-grounds in these cases for the past two and one half years.

When the recent cases are examined for the first time, that is, within twenty-four hours after admission to the hospital, there is usually found a general edema blurring equally all the details in the fundus of the eye, and this blurring may be slight, or sufficient to obscure greatly the usual landmarks. The venous twigs when visible are usually dilated out of proportion to the size of the accompanying arteries.

Frequent and careful observations are made while these patients are in bed. In cases uncomplicated by an increase in the intracranial tension, the retinal edema gradually subsides. Occasionally, in some of the routine examinations after the first twenty-four hours following the accident, we note either an increase in the general edema that previously existed, or, to the edema that heretofore blurred equally all details, there is a decided added edematous obscuration of the nasal half of the disk and its margins.

These observations are most valuable, because they are usually some of the earliest indications of a rise in the intracranial pressure, and just as soon as possible after their detection the measurement of the pressure of the cerebrospinal fluid at lumbar puncture by the spinal mercurial manometer is done to determine its extent. In nearly every such instance an increase in the pressure of the cerebrospinal fluid above normal was recorded.

Infrequently there is seen in some of the cases an edema occupying the entire disk the height of which is measurable with the ophthalmoscope (papilledema). In all of these cases the cerebrospinal fluid was found to be under higher tension than normal

The degree of pressure of the cerebrospinal fluid at lumbar puncture recorded in a given case, and its pressure effect on the cerebral cortex, are prime factors which must be taken into account in deciding the character of the treatment the condition requires.

Dr. Sharpe advises that all patients with fracture of the skull be placed in bed, kept absolutely quiet, free catharsis maintained, given a liquid diet, and an ice helmet applied to the head. If no signs of intracranial pressure develop, the foregoing treatment is all that is given; but if the intracranial pressure is slightly increased and up to nearly double the normal, then in selected cases repeated lumbar puncture may be performed, and the condition relieved. If, however, the cerebrospinal fluid is found both with the ophthalmoscope and at lumbar puncture to be double the normal and even more than double, and the pulse rate may or may not be greatly lowered from medullary compression, then he advises a simple cranial decompression to be performed for the relief of pressure and for drainage before a possible collapse of the medulla occurs.

An examination of the fundus of the eye twenty-four hours after a lumbar puncture or cranial decompression has been done usually reveals a reduction in the amount of the edema that had existed previous to these operations.

127 West Fifty-Eighth Street.

SYPHILIS OF BLADDER*

H. A. FOWLER, M.D.
WASHINGTON, D. C.

Syphilitic disease of the bladder has been considered a rare affection. In the older textbooks it is sometimes not mentioned at all or it is dismissed briefly or its existence is even denied. In the most recent works the disease is considered so rare as to merit only the briefest mention. Within the past sixteen years, however, a considerable number of carefully studied cases have been recorded in widely scattered reports. These furnish sufficient data for a fairly comprehensive clinical study.

The history of this affection falls naturally into three periods. The first comprises those rare observations on syphilitics coming to necropsy in whom ulcers, tumors, or perforations of the bladder were discovered and were considered syphilitic in origin. This period extends to 1879, when Proksch critically reviewed all the published cases up to that time. He found only six cases which could be considered definitely proved (Morgagni, Ricord [two cases], Virchow, Vidal di Cassis, Tarnowsky).

To the second period belongs a small number of cases observed clinically in which the diagnosis was confirmed by the disappearance of all symptoms following antisyphilitic treatment (Morris, Grivtsoff [two cases], Chezelitzer, Margoulies, Towbien). No direct examination of the bladder lesion was made.

The third period begins in 1900, when Matzenauer published the report of his case and described for the first time the cystoscopic appearance of tertiary syphilis of the bladder. During the past sixteen years the number of observations has rapidly increased, so that up to the present time about forty cases have been reported. In 1909 it was shown that the bladder is

* Read before the Section on Genito-Urinary Diseases at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

involved in the secondary stage. According to Levy Bing, a systematic examination of the bladder during the secondary stage of the disease will reveal that a more or less characteristic erythema, resembling the roseolar rash on the skin, and also superficial ulcerations are not rare. As these produce few or no symptoms they may be easily overlooked without a routine cystoscopic examination.

REPORT OF CASE

History.—N. G., boy, aged 19 years, came to the clinic complaining of frequent and painful urination, and passing bloody urine. His past history was unimportant. There was no history of syphilis or gonorrhea. For the previous three months the patient had had to pass urine frequently, night and day. On an average he got up eight times at night to void, and he urinated every ten minutes during the day. Marked pain in the perineum and along the urethra accompanied each urination, and the pain persisted several minutes after the act. At times the urine was quite bloody; at other times it was only slightly tinged with blood.

Examination.—The patient was a healthy looking young colored farmer boy presenting the facies characteristic of a painful urinary disorder. The chest and abdomen were negative. The external genitalia were normal. The urine was uniformly turbid, owing to the presence of pus, bacteria and red cells. It was slightly acid in reaction, and the specific gravity was normal. There was a slight cloud of albumin, but there were no casts. There were no scars on the penis or other evidences of healed cutaneous lesions. The inguinal axillary and epitrochlear glands were definitely enlarged. This glandular enlargement without apparent cause aroused suspicions of syphilis, and suggested the possibility of a syphilitic infection of the bladder. A Wassermann test was made and reported as strongly positive.

Cystoscopic Examination.—This was painful despite the free use of cocain. There was a marked general cystitis. All markings of the vesical mucosa were completely obscured. The mucous membrane was of a uniform rose color and had the appearance of a curtain of uniform color spread out over the inner wall of the bladder. It was difficult to locate the ureteral openings. Just to the outer side of the right ureteral opening was a single small ulcer, which was bleeding. It was about 1 cm. in diameter, with an irregular outline and an inflamed base. No other ulcers could be seen. The appearance of the ulcer suggested tuberculosis, but no tubercles could be found in the bladder, and the urine was negative for tubercle bacilli on repeated search.

Treatment and Result.—It was decided to apply the therapeutic test without any other form of treatment whatever, either local or general. Salvarsan, 0.6 gm., was given intravenously. The following day the patient noticed a definite decrease in frequency of urination. The improvement was continuous and rapid, and in a week's time the patient was able to retain the urine for three hours with little or no pain on urinating. A second injection of salvarsan was given, followed by mercury by mouth. Cystoscopy three weeks later revealed a remarkable change in the bladder. No trace of the ulcer could now be found. The ureteral openings appeared normal. The peculiar appearance of the mucosa had entirely changed. Normal markings of the mucous membrane were now clearly distinguished, with here and there discrete patches of inflammation such as one sees in an ordinary cystitis of a mild degree. No local treatment had been given previous to this examination. The urine was still turbid, owing to the presence of bacteria, pus cells and an occasional red cell. The improvement in the patient's condition was most striking. He was now able to retain his urine for three or four hours without discomfort, and voided without the marked pain and tenesmus of which he complained when he came under observation. His condition was so satisfactory that he insisted on going home to work, as he declared he was perfectly well.

COMMENT

There are several points of interest in the foregoing case report. The symptoms were those of a severe cystitis coming on without apparent cause. The urine showed an acid total pyuria, together with red cells and bacteria. The condition suggested tuberculosis of the urinary tract with a secondary infection, probably colon bacillus. Repeated search for tubercle bacilli, however, was negative. There were no changes to be made out in the epididymides, vesicles or prostate.

It so happened that I was looking for a case of syphilis of the bladder at the time. The general glandular enlargement aroused my suspicions of syphilis, and these were strengthened by a strongly positive Wassermann test. Cystoscopy revealed, in addition to a solitary ulcer about the right ureteral opening, a peculiar appearance of the mucous membrane such as I had never seen before. But there was nothing about the cystoscopic findings which I could consider characteristic of syphilis. Certainly the ulcer might easily have been mistaken for tuberculosis. I could not, as a result of my examination, say that the bladder lesion was syphilitic. It was determined, therefore, to put the patient on antisyphilitic treatment and to watch the effect of this on the symptoms and the vesical lesion. I was careful to avoid any local treatment whatever, or any internal medicine to relieve the symptoms. The marked and prompt improvement in the symptoms and the ultimate disappearance of the vesical lesion following salvarsan alone seems to justify the diagnosis of syphilis. It is of interest to note that no history of syphilis was obtained in my patient. This only serves to emphasize the point to which attention has so often been called, namely, that the history in many of these cases is thoroughly unreliable.

ETIOLOGY

Lesions of the bladder occur during the secondary and tertiary periods of the disease. In the parasyphilitic diseases the bladder is commonly involved, notably in tabes. Age and sex have no influence on the development of the bladder lesions. As tabes occurs more frequently in males, however, the associated bladder disturbance is more often observed in this sex. Although more common in middle life, cases occurring at the two extremes have been observed: at 4 years (Tarnowsky) and at 66 years (Gayet and Favre[1]).

The secondary lesions usually appear within a few months after infection, and are generally accompanied by lesions of the skin and other organs. Tertiary lesions, on the contrary, appear after a much longer period, up to twenty-five years. The bladder lesion may be the only evidence of the disease. In other cases the active syphilitic lesions of other organs or healed scars may be found. The majority of cases so far recorded belong to the tertiary period. It is quite probable that involvement of the bladder during the secondary stage would be observed more frequently if a routine cystoscopic examination were made. The occurrence of mild symptoms of cystitis during this stage is easily overlooked. These are attributed to the usual causes and their relation to a specific infection is not considered, particularly as they disappear under salvarsan and mercury.

1. Gayet and Favre: Jour. de Urol., 1915, **6**, 152, three illustrations in color.

SECONDARY SYPHILIS

Nine cases of secondary syphilis of the bladder have been reported — six males and three females. The youngest was a child, aged 4 years, having been infected by its nurse. At necropsy extensive ulcerations of the mucous membranes, including bladder and urethra, were found. The liver was syphilitic. In all cases the bladder lesions were accompanied by secondary syphilis elsewhere — skin, mucous membranes, etc. Macules, papules and ulcerations have been described. Duroeux has described a macular eruption resembling roseola of the skin. In Fenwick's case (postmortem), papules were disseminated over the bladder mucosa resembling condylomas. The ulcers are usually multiple, from two to twelve, rounded or oval, superficial, with a slightly elevated edge and a necrotic base. They occur more frequently about the ureteral orifices, but may be found in other parts of the bladder. The adjacent mucosa is edematous, hyperemic, and the vessels are injected and prominent. The remainder of the bladder appears normal.

The symptoms of the secondary stage vary with the location and character of the lesion. In the case of Levy Bing there were absolutely no symptoms referable to the bladder, and the vesical lesions were discovered during routine cystoscopy. With ulceration at or near the vesical neck, symptoms of cystitis more or less acute are observed. Frequency, urgency, and tenesmus may be marked day and night, and are not influenced by rest. Pain is then a constant symptom referred to the suprapubic area or perineum, and radiating along the urethra, to the rectum and to the lumbar region. Hematuria when present is never profuse and is always terminal. The bladder capacity is reduced, and varies with the intensity of the symptoms.

The urine is often clear. In the presence of infection it is turbid, owing to the presence of pus and organisms. It may be bloody from the presence of red blood cells. The presence in the urine of the spirochete has been reported, but this observation has not been confirmed.

TERTIARY SYPHILIS

By far the greater number of cases of bladder syphilis so far observed belong to the tertiary stage of the disease. This may be due to the more pronounced symptoms associated with tertiary vesical lesions. Attention is thus directed to the bladder, and examination reveals the specific nature of the trouble.

Gummas of the bladder develop insidiously like all new growths, and in the early stages produce little or no disturbance. Urination is slightly more frequent and associated with mild discomfort in the region of the bladder, in the perineum, or in the urethra. Hemorrhage, sudden in onset and profuse, may be the first and only symptom noted. More often symptoms of cystitis develop and increase rapidly in intensity.

Hematuria is the most constant and most striking symptom of tertiary bladder syphilis. It closely resembles the hemorrhage of new growth of the bladder. It appears suddenly without pain, and is uninfluenced by rest or posture. It may continue for days or weeks and gradually subside, only to recur after a longer or shorter period. Complete retention may result from the formation of clots within the bladder. As a rule, hematuria increases with the duration and progress of the disease. Exceptionally it may be absent altogether.[2]

Pain is an inconstant symptom, and varies with the location of the lesion and the presence or absence of infection as a complication. In Simons'[3] case the patient complained of a dull dragging pain in the hypogastrium which had existed for two years. At first intermittent, it became constant day and night, and increased as the bladder filled. In some cases, pain is a marked feature of the clinical picture. It is likely to be more severe at the end of urination if the ulceration is located at the bladder outlet, and it is accompanied by violent tenesmus. Frequency of urination is a disturbing symptom in most cases. Slight at first, it rapidly increases until the patient voids every few minutes with pain and tenesmus. While the symptoms in advanced, long standing cases are very severe and distressing, the absence of marked symptoms in the presence of severe bladder lesions in the earlier stages is noteworthy. The development of the more acute symptoms probably coincides with the degenerative changes in the gummas, and ulcer formation. Often the bladder lesion is the only evidence of syphilis to be discovered. In the absence of a definite history, the specific nature of the disease is not suspected.

CYSTOSCOPIC APPEARANCES

As viewed by the cystoscope, two varieties of lesions occur: gummatous ulcerations and papillomatous growths. The former are more common; the latter are rare. They occur separately, but may exist together.

Such ulcers are formed by the breaking down of a gumma of the bladder at its center. They are usually multiple, there being one to three which are rounded or oval, and which vary in size, the largest being from 1.5 to 2 cm. in diameter. They are elevated above the bladder wall, projecting into the bladder cavity. They present a punched-out appearance with irregular borders and a grayish necrotic base. On the base of the ulcer one sometimes observes the necrotic material detached in places, leaving a red, nodular surface which bleeds freely. The surrounding mucous membrane is edematous, hyperemic and dark red or livid in color. The vessels are markedly injected and prominent.

The papillomatous lesions are very rare. In Margoulies' case (Case 1) there were three small growths the size of a small bean situated close together and located on the base of the bladder just outside the ureteral orifice. The appearance of these growths suggested cancer of the bladder, and an operation was advised. It was by mere accident that the operation was not performed, and iodid was administered. Prompt disappearance of the lesions followed.

Gayet and Favre[1] report a case (Obs. 2) of sclerogumma of the bladder and prostatic urethra. The bas-fond was elevated, thickened and reddened, and indurated. The fiery red surface presented a few small ulcers and numerous fissures giving the appearance of cerebral convolutions. The general appearance resembled that seen in cancer of the cervix which has involved the bladder wall. The same character of lesion is described by Picot.[4]

Syphilitic lesions of the bladder, both secondary and tertiary, develop slowly and show no tendency to heal spontaneously. The long duration of symptoms in the reported cases is a striking feature of the clinical his-

2. Picker, R.: Ztschr. f. Urol., 1913, **7**, 192.

3. Simons, Irving: Case of (Syphilitic?) Ulcer of the Bladder, THE JOURNAL A. M. A., June 21, 1913, p. 1943.

4. Picot: Jour. de Urol., 1912, **2**, No. 5.

tory. The secondary lesions are superficial. The tertiary involve the deeper layers of the bladder wall, and unless arrested may result in perforation. Such perforation, developing rapidly and involving the peritoneal surface, may terminate in fatal peritonitis. If the process develops more slowly, a loop of bowel may become adherent to the bladder, and perforation into the bowel occurs. Thus syphilis is one of the etiologic factors in the production of vesico-intestinal fistula. Vesicorectal or vesicovaginal fistula may result from the perforation of the bladder base.

TREATMENT

A striking feature of bladder syphilis is its prompt response to specific treatment. This is characterized by the immediate subsidence of all symptoms and the gradual disappearance of the vesical lesions. On the other hand, the measures usually employed in the treatment of ordinary cystitis have no influence whatever on either the symptoms or the lesions.

Profuse and persistent hematuria, which is often the presenting and predominant symptom, quickly subsides and disappears completely in a few days after the beginning of treatment with mercury or after the administration of salvarsan. No less striking is the prompt subsidence of all signs of vesical irritation, frequency, urgency, tenesmus, and a gradual return of the vesical capacity to normal.

The gradual healing of syphilitic lesions of the bladder may be followed by repeated cystoscopy. At the second congress of German urologists, Ernst Frank presented a series of cystoscopic photographs demonstrating the gradual healing and final disappearance of these lesions under treatment. Similar demonstrations have been made since by other observers.

It is the strikingly rapid subsidence of symptoms under specific treatment that makes the therapeutic test so valuable in differentiating syphilitic from non-syphilitic vesical lesions.

The bladder changes occurring in certain diseases of the nervous system which we now designate as parasyphilitic are too well known to demand discussion at this time. They have been considered in another place.[5]

1621 Connecticut Avenue.

ABSTRACT OF DISCUSSION

DR. MARTIN KROTOSZYNER, San Francisco: I have seen one case that, judging from the therapeutic result, I feel justified in classing among the cases that are considered syphilis of the bladder. A baker of 60 entered the hospital on account of sudden, painless and abundant hematuria, as the cause of which a small papillomatous growth, situated near the trigon and midway between the ureters, was ascertained cystoscopically. The patient admitted previous syphilitic infection. He had married late in life and was the father of two half-grown, healthy girls. Suspicious scars and other skin manifestations were the only other objective findings. The Wassermann was strongly positive. All bladder symptoms, including hematuria, quickly disappeared under combined antisyphilitic treatment. At a second cystoscopy, six months after the patient's discharge, the papillomatous excrescence was still visible, though apparently less prominent and reduced in size.

While I have observed a great many bladder lesions due to central or spinal syphilis, I have never seen a bladder ulcer the syphilitic nature of which, as in the case reported by Dr. Fowler, became obvious through its prompt reaction to specific treatment. My own observation, therefore, does not constitute a classical case of bladder syphilis. Such cases must be very rare indeed, and I recall in this connection the statement of Casper, who doubts the occurrence of bladder syphilis, of which he, like other authorities, has never been able to obtain authenticated cystoscopic evidence.

DR. CHARLES J. WATTERSTON, Birmingham, Ala.: I can add one more case to Dr. Fowler's series. It is the case of a negro girl in whom we made a cystoscopic examination on account of hematuria. There was a small, raised ulcer about 1 cm. in diameter just below the right ureter and several smaller erosions running down toward the trigon. The patient had a strongly positive Wassermann, there were other evidences of syphilis, and the lesions healed completely under antisyphilitic treatment; that is, salvarsan intravenously, followed by mercury.

DR. H. A. FOWLER, Washington, D. C.: Formerly we were led to believe that syphilis of the bladder did not occur, or, if it did exist, was rare. The experience of competent observers during the past few years compels us to change this view, and we now believe that this disease is not so rare as it was thought to be. This is in line with our knowledge concerning syphilitic infection of other mucous membranes. It is probably our failure in diagnosis rather than the rarity of the lesion that is responsible for the prevailing opinion.

There are one or two points to emphasize. There are no characteristic cystoscopic appearances by which syphilitic lesions of the bladder can be recognized. The diagnosis cannot be made by cystoscopy alone. The lesion cannot be differentiated in all cases by its cystoscopic appearances from tuberculosis or new growths. There are a number of cases reported in which syphilis was mistaken for cancer. In the secondary stage the lesions are superficial and may produce no symptoms whatever. Hence they are easily overlooked.

After all, the essential point is to have in mind the possibility of syphilis of the bladder if we are to avoid errors in diagnosis. The mistake has been made of advising operation for a supposed new growth, then to see the lesion clear up rapidly under antisyphilitic treatment.

5. Besides the citations in the text, these additional recent cases will be of interest:
A critical review of the literature is given by Paul Asch in connection with his paper in the Zeitschrift für Urologie, 1911, **5**, 504.
Pereshivkin: Ztschr. f. Urol., 1911, **5**, 732.
Mikhailoff: Ztschr. f. Urol., 1912, **6**, 215, two colored plates.
Mucharinsky: Ztschr. f. Urol., **6**, 376.
Pedersen, James: Med. Rec., New York, 1916, **90**, 235.
Baker, Theodore: Surg., Gynec. and Obst., **24**, 187.

NINETEEN CASES OF TYPHOID FEVER DUE TO EATING TURKEY SALAD

POWHATAN S. SCHENCK, M.D.
Health Commissioner
NORFOLK, VA.

A reception was held at a local club by a number of women of Norfolk, June 26, 1917, about fifty guests being present. Among other articles of food served, there were several bowls of turkey salad. The turkeys were supplied from a cold storage plant, the celery came from Baltimore, the lettuce was bought in the open market, and the mayonnaise dressing was mixed at the club. The salad was prepared by a colored woman who has a local reputation as a cateress; she cooked the turkeys at home, carried them to the club, and prepared the salad there. Her assistants were three colored women and a colored man.

Mrs. W. and Mrs. R., two of the guests, assisted in serving the salad, ate portions of it, and both came down with typhoid fever fourteen days later.

Mrs. D., Mr. C., and Mr. T., also guests at the reception, ate salad and in sixteen days developed typhoid fever.

Mr. W., who had typhoid fever ten years before, stated that he ate the salad that night and two weeks later he noticed an elevation of his temperature with symptoms of mild typhoid. He had a fever, lassitude, weakness, and the usual symptoms of typhoid, which continued for three weeks. He thought he had a mild form of the disease. He reported it himself and said that he was quite certain he had typhoid, as he recognized all the symptoms of his former attack. We did not enter the case, however, in our records.

After the reception, the women sent a bowl of the salad to an orphan asylum. At that time there were eight little girls in the institution. One, aged 6 years, having a delicate stomach, the matron did not give her any of the salad; another, aged 12, refused it; the other six girls, aged 8, 5, 14, 14, 15 and 6, respectively, ate more or less freely of the salad, and in from thirteen to sixteen days all came down with typhoid fever and are now, August 4, in the hospital.

E., one of the colored women who assisted in preparing the salad, ate some of it and gave portions to her two children. All three came down with typhoid; E. three days after the reception, and the children two weeks later. E. complained of being sick for two weeks prior to the reception. A brother of E. visited his sister the day after the reception. He was given a dish of the salad, and developed typhoid, July 10. Another colored woman, who assisted in preparing the salad, carried a portion home, gave some to her two children and also to two nephews; all four came down with typhoid.

We find that all of these persons came down with fever in from twelve to sixteen days after eating the salad, except E., who assisted the cateress in preparing and serving the salad. No other common factor figured in these cases; practically all the patients took milk from different dairies; 50 per cent. of them did not drink milk at all. We eliminated water, in view of the few cases, together with the fact that the Norfolk public water supply is analyzed and examined daily and is constantly treated with liquid chlorin. Moreover, investigation shows that there is no case of typhoid fever on the watershed.

Each of these persons ate the salad and came down at the expiration of the usual period of incubation, except E. Now, we find that E. was sick for two weeks prior to the night on which the salad was served, although she did not take to her bed, but did go to bed three days later, namely, June 30, with high fever and the usual symptoms of typhoid. Of course, if she had been infected from the salad, June 26, she would not have developed typhoid at this early period. It would appear that E. had typhoid for two weeks prior to June 26, the night of the reception, and may have infected that portion of the salad which she handled.

It would appear further, as a logical deduction, that that portion of the salad handled by E. was the last served at the table, and only a small number of the guests partook of it, and it was this portion that was left over and distributed to the asylum and carried home by the assistants, since it is obvious that if this portion had been served early on the table it would not have been left over for distribution. On the other hand, if this portion had been served freely to the guests and was infected, the personnel of the cases would of course have been entirely different and no doubt larger.

PSYCHOSES OTHER THAN PARETIC DEMENTIA IN SYPHILITIC INDIVIDUALS *

ALFRED GORDON, M.D.
PHILADELPHIA

The great multiplicity and variability of manifestations in syphilis of the nervous system is a well established fact, but the rôle of syphilis in mental affections, with the exception of paretic dementia, has been suspected only since 1879, when Fournier[1] expressed the following view: "While syphilitic insanity has not yet a distinct place in nosology, nevertheless, personally, I feel that syphilis is apt to create cerebral disorders which may be considered as undisputable forms of insanity." Since then the relationship of syphilis to psychoses as cause and effect has been studied by a few observers, but as yet no definite opinion can be formed. The importance of this problem cannot be overestimated. The present contribution, which concerns twenty-three cases kept under observation for a long time, will perhaps enable one to elucidate some features of this difficult problem. Before entering into a discussion of the causal relationship between syphilis and the mental manifestations, let us consider the entire series of cases in two separate groups. In the first group there were five cases associated with secondary manifestations of syphilitic infection. The second group consisted of eighteen cases of mental disorders in the tertiary period of syphilis.

REPORT OF CASES—GROUP I

CASES 1 and 2.—Two patients developed a slight fever, with the appearance of mucous patches in the mouth, and a delirious state. Although the fever was brought down to normal, the delirium continued for a period of ten days in one case and seven days in the other. The delirium in both cases was accompanied by visual hallucinations. Complete recovery followed in both cases. Two months later in one, and three months later in the other, a similar attack occurred and again it was preceded by fever, also by a gastro-intestinal disorder, insomnia and headache. The delirium developed rapidly in both cases, and complete recovery followed after vigorous mercurial treatment. Both patients were free from alcoholic or other intoxications.

CASES 3, 4 and 5.—The other three patients of the same group presented mental phenomena of a more prolonged character. Mental confusion was the predominant feature. Defects of orientation in space and time and amnesia were the other manifestations. One patient, for example, presented enlarged cervical and inguinal glands, muscular pain and persistent headache, four months after the initial infection. He began then to complain of pain in the throat. Several mucous patches were seen in the pharynx and on the tonsils. The temperature rose to 101 F. He became somewhat stuporous, replied to questions with considerable delay, placed his hand frequently on the head as if in pain, ceased to ask for food, and was decidedly confused. He had great difficulty in recognizing his own relatives, and succeeded only after looking at them for some time. He made errors in dates and places. He could not recall the names of his friends. He mistook one of his children for another. He did not know the number of his children, the date of his marriage, and a number of other important events in his life. Being a teacher of languages, and speaking French quite well, he now could not recall the meaning of ordinary words. Asked in

* Read before the Section on Nervous and Mental Diseases at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelope.

1. Fournier: La syphilis cérébrale, Paris, 1879.

French how he felt or if he had headache, he was unable to grasp the meaning of the word "tête." He kept on repeating this word without understanding it, and when insisted on, he finally said that he did not understand it. At night he was sometimes slightly delirious and would attempt to get out of bed. During the day he was found several times as if conversing with some one. He then looked around him, and, after saying a few words, he would pause and then lower or raise the tone of his voice. He evidently had hallucinations. This condition continued for two weeks, during which time he received an intraspinal injection of neosalvarsanized serum followed by mercurial inunctions. Improvement was soon evident. Two weeks later he received another similar treatment, and the man made a gradual recovery at the end of eight weeks. Memory, orientation and mental attitude have all returned to normal. The enlargement of the glands remained unaltered, but the mucous patches healed promptly. The headache disappeared entirely.

In another case a man of 29, piano teacher, five months after the initial infection presented an acute pharyngitis accompanied by a slight elevation of temperature (99.3 F.). He rapidly developed mental hebetude. He was confused and disoriented, and his memory became cloudy. The entire condition lasted about two weeks, during which time he had one intraspinal injection of 0.9 gm. of neosalvarsanized serum. With the disappearance of the pharyngeal condition, the mental disorder also became normal.

To sum up, the five cases of the first group presented a symptomatology which we ordinarily find in toxi-infectious psychoses. A delirious or stuporous state is the chief manifestation. A confusional condition is almost always present. Hallucinations may or may not be present. What is particularly interesting and quite characteristic is the occurrence of the mental phenomena apropos of acute secondary manifestations. When the latter disappear, the former commence to improve, but they usually last longer than the somatic manifestations. Finally, it is noteworthy to observe that the specific treatment has a rapid and efficacious effect on the psychic and physical manifestations which, as already mentioned, run usually parallel. The entire picture of the mental status in the secondary period of syphilis is quite analogous to that frequently observed in infectious diseases and especially in alcoholic intoxication.

GROUP II

The second group comprises cases in which the mental disorder developed many years after the initial infection. Without entering at present into the possible relationship between the old syphilitic infection and the present psychic manifestations, let us first register the occurrence of these manifestations in individuals with a former history of syphilis. We have in this group eighteen cases, three of which developed in connection with a traumatism, subacute confusional states with all the characteristic features met with in the first group of cases, except for the fact that those phenomena were of a milder character. There were no hallucinations, but merely a state of mild confusion and incoherence; also a mild delirium in the evening. A slight degree of amnesia was present throughout the entire duration of the affection. One case presented the mental manifestations of Korsakoff's syndrome, except the polyneuritis. We find here anteroposterograde amnesia, confusion, disorientation and confabulation.

Case 6.—M. H., a laborer, aged 45, contracted syphilis at the age of 20. He is married and has two children. His wife has had three miscarriages. The Wassermann test is positive on the blood serum. There is no history of alcoholism. After a few days of very hard labor he began to complain of headache, which became very persistent. Soon somnolence made its appearance. The patient would fall asleep several times a day. A confusional element was associated with the amnesia. The patient was at first unable to recall acts or thoughts of his own, or of others, which occurred on the same day, but soon the amnesia concerned also past events. He was unable to realize the situation. He could not tell how long he was ill. At times he would not recognize surroundings. He could not tell the time of the week or of the year. At other times he would clear up and answer questions correctly. Pseudoreminiscences were striking. He would speak of persons whom he never met. He would speak of events that never occurred; as for example, one evening he told his nurse of participating in a ball given by the mayor of the city, saying that he danced the entire evening with a beautiful lady. A few days later he spoke of having crossed a bridge at moonlight and of having met "a very strange man who led him to a castle and then disappeared." This fantastic confabulation, together with the amnesia, was quite conspicuous, and if we add the periodic somnolence, the mental clinical picture of my patient will be complete. As to the somatic symptoms, the patellar tendon reflexes were exaggerated. The patient complained of headache. The disorder lasted six weeks, after which a mild degree of mental hebetude remained for two weeks. The recovery was complete. Thirteen months later a similar attack occurred which was milder in its individual symptoms and which lasted but three weeks. At no time was there any evidence of polyneuritis.

This observation is interesting for two reasons. First, it speaks against the exclusivism of the discoverer of this syndrome, Korsakoff, who believed that it can exist only in association with polyneuritis and only in cases of alcoholism. Some authors have already called attention to the existence of Korsakoff's syndrome without polyneuritis. Suffice it to mention the observation of Stransky[2] on tabes, in which Korsakoff's syndrome disappeared when the patient was placed on antisyphilitic treatment. Chaslin and Portocalis[3] reported a case of Korsakoff's psychosis, without polyneuritis, which came to necropsy. Stepanoff,[4] Raymond,[5] and Roemheld[6] speak of the occurrence of incomplete Korsakoff's psychosis, namely, without polyneuritis, in syphilis of the central nervous system. They all appear to be unanimous in the opinion that the psychosis is due to a syphilitic intoxication, although Roemheld believes that the increase of intracranial pressure in cerebral syphilis may be a contributory factor. The foregoing observation of my series seems to corroborate the view that the polyneuritic psychosis of Korsakoff is characteristic not only of alcoholic, but also of other toxi-infectious conditions, such as syphilis.

The other important fact brought out in my case, a fact which may be considered of some diagnostic value, is the association of somnolence with the other mental manifestations. Raymond, quoting Jolly, and Stepanoff, from his observations in Ziehen's clinic, both call special attention to the symptom "somnolence" which was present in their cases of cerebral syphilis with Korsakoff's syndrome. It appears, therefore, that this occurrence is frequent enough to be taken into consideration in differential diagnosis.

The remaining fourteen cases are distributed as follows: Six cases presented the clinical picture of manic-depressive psychosis; three cases were of the paranoid

2. Stransky, Erwin: Jahrb. f. Psychiat., 1905, **26**, 422.
3. Chaslin and Portocalis: Jour. de psychol., 1908, p. 303.
4. Stepanoff: Berlin thesis, 1910-1911.
5. Raymond: Pathologie nerveuse, 1910, p. 279.
6. Roemheld: Arch. f. Psychiat., 1906, **41**, 703.

type; two cases were with involutional melancholia, and three cases presented cerebral syphilis of long standing with progressive dementia.

The six cases of manic-depressive psychosis present two distinct groups. In three of them auditory hallucinations were present through every one of the maniacal phases of the condition. In the other three cases there were no hallucinations. It is also interesting to observe that the specific treatment had a beneficial effect on the first group, but no effect whatever on the last group. All the six cases presented a positive Wassermann reaction on the blood serum. The fact that in all the six cases there were morbid hereditary elements, such as insanity, psychasthenia and epilepsy, deserves special mention. In the first three cases there were also personal morbid antecedents, such as an attack of chorea in childhood, irritable disposition, and prolonged periods of insomnia. It is also interesting to call attention to the fact that in the three hallucinatory cases there was a marked meningeal reaction during the maniacal phases revealed by a cytologic examination of the spinal fluid. The number of cells ranged between thirty-five and ninety, and were mostly of lymphocytic type. One of these cases is particularly interesting:

CASE 7.—A man, aged 40, a watchmaker, contracted syphilis at the age of 22. He is married and has three children. One child has Little's disease, one is epileptic and the third is apparently normal, but pale and frail. His wife had three miscarriages. The patient had three attacks of chorea when a child. He was always considered peculiar and eccentric, and frequently suffered from insomnia. His father was alcoholic, and his mother, before her marriage, was confined to an institution for the insane for a period of eighteen months for some mental disorder. At the time of examination he presented no special neurologic symptoms, except exaggerated tendon reflexes with occasional disturbance in the power of controlling the sphincter of the bladder. The Wassermann test was strongly positive on the blood serum and spinal fluid. Up to the present illness, nothing abnormal was observed in the patient's behavior. He made a comfortable living, led a regular life, and did not use alcoholic beverages. His third child suddenly took sick and died from pneumonia. As this was the only normal child, its death threw the patient into such a state of despair that for forty-eight hours he could not sleep and did not partake of any food. He became depressed, and ceased to speak. When questioned, he answered after considerable delay. He was found frequently with tears in his eyes, and would moan, and complain of his fate. The condition lasted six days, after which the patient entered a state of great excitement. He was restless and impatient. He would discuss matters in a loud voice and disagree on any subject. He became quarrelsome, and would break and tear things that fell into his hands. Two days later he commenced to complain of annoying and disturbing sights, especially in the evening. He saw faces of a threatening character. He saw his child being tortured by other children. He saw women jumping into a river for the purpose of drowning. The patient showed no confusion, and answered questions clearly, but persisted in seeing vividly the sights which, he said, threw him into a state of uncontrollable restlessness. Soon he developed expansive ideas of himself. He assumed an air of importance. He asserted his ability to accomplish acts that others could not. He considered himself well known to personages of note. He expected to become very wealthy. Gradually the period of excitement began to subside, the patient commenced to sleep at night, and the hallucinations disappeared. For two weeks the patient appeared to be free from any disorder and to take an interest in his surrounding, but he began to return gradually to his depressive state, which was of the same character as the first attack. With this attack, however, there was present a delusion of self-blame. He conceived the idea that his child died through his neglect. He worried intensely, and was frequently seen in profuse tears. This phase lasted longer than the phase of depression in the first attack. He finally recovered, but soon entered into a hypomaniacal state. He become talkative, restless and irritable, but the state of exaltation was decidely less pronounced than in the first attack of the psychosis. The state of mind concerning his own importance did not exist this time. There was no more talk about his riches, his abilities, etc. He had also some visual hallucinations of a transient character, which occurred only at night. He would see for a few moments images of faces of dead relatives or of his child. The patient was treated intraspinally with neosalvarsanized serum. He had two injections during the two attacks and only during the maniacal phases. A marked reduction of the lymphocytosis in the spinal fluid followed the treatment, and this ran parallel with the decrease in the excitement and with the shortening of the maniacal phase. In the depressive phase no increase of the reduced lymphocytosis was observed, and there was no further decrease in the already obtained cytologic formula. The spinal fluid was found normal when examined several weeks after his last attack.

At first glance one is inclined to admit a certain relationship between the lymphocytosis and the manifestations of the psychosis. On the other hand, there is no proof that the lymphocytosis did not exist before the outbreak of the psychosis. The disappearance of the lymphocytes may have been due entirely to the treatment. The irritation of the spinal meninges which was evident here because of the lymphocytosis was evidently of syphilitic nature. In view of the parallel development of the psychosis and the meningeal reaction it is difficult to reject all relationship between the two. It is equally difficult to admit that the syphilitic toxins are liable to create such a typical psychosis as is also encountered in cases without a syphilitic infection. One must not forget that we are dealing here with an individual whose personal and hereditary antecedents were of a pathologic nature. We have here important predisposing elements which are so frequently observed in the psychosis under discussion. We have here also a powerful exciting factor, namely, the death of the patient's beloved child, and of the only normal child, while the other two defective children were a source of constant worry and anxiety to the patient. We have here, consequently, sufficient causative agents to influence the domain of affectivity, as well as that of intelligence. The latent psychopathic tendencies were evidently awakened here not only by the direct emotional incident (death of the beloved child), but also by an outbreak of syphilitic meningitis which, to a certain extent, brought in some modifications in the clinical picture of the manic-depressive psychosis. The modifications apparently consisted of the hallucinatory phenomena, which were present exclusively during the maniacal phases. The occurrence of lymphocytosis only during the phase of exaltation, but not of depression, finds its *raison d'être* when we attempt to connect the attack of syphilitic meningitis with the simultaneous onset of excitement accompanied by visual hallucinations. It is quite logical to assume that parallel with a spinal meningitis there exists a cortical meningeal irritation. The presence of hallucinations, and only during the manic phase, may serve perhaps as an important diagnostic element in considering manic-depressive psychosis in an averred syphilitic individual.

The three patients who presented hallucinatory elements are still under observation. Their Wassermann reaction still remains positive in spite of free-

dom from distinct outbreaks of manic and depressive states.

The other three cases of the same group presented no hallucinations. The individual phases of the psychosis were similar to those of the first group. In all the Wassermann tests on the blood were positive, but on the spinal fluid they were negative. There was a lymphocytosis, but of an exceedingly moderate degree. The number of cells ranged from ten to eighteen. In all three patients the only objective neurologic symptom was a more or less increased patellar tendon reflex. The first outbreak of the psychosis was precipitated in all three cases by some strong emotional event. They all received between two and three intraspinal treatments. Two improved and one was uninfluenced by the treatment. The improvement in the two was temporary, as shortly after the last injection the condition returned. It was apparent that in this subgroup of three cases there was less relationship between the potential syphilis and the psychosis than in the first subgroup.

The occurrence of manic-depressive psychosis in the tertiary period of syphilis is certainly a possibility, but as to their relationship definite conclusions cannot as yet be drawn. In the literature there are some records pointing to the coexistence of this psychosis with cerebral syphilis, but so far none of them, including those of Kraepelin, can, with any degree of certainty, solve the causal relationship between the two. Finckh[7] was among the first to describe periods of expansion alternating with periods of depression accompanied by hypochondriacal delusions of a more or less systematized nature. Westphal[8] describes three such cases. The most extensive study of syphilitic mental disorders which may resemble phases of manic-depressive psychosis was made by Plaut.[9] He saw maniacal states with intense agitation and expansive ideas, so that he acknowledged the great difficulty in differenting them from genuine mania. Other authors saw similar conditions in syphilitic individuals. Mosny and Barat[10] report a case of acute psychosis of the manic-depressive type with a meningeal reaction of syphilitic origin.

The diagnosis of the psychosis during the maniacal state sometimes presents great difficulty. Kraepelin lays special stress on this difficulty in differentiation from paresis. Ziehen[11] reports cases in which the diagnosis of paresis of the circular form was made, but which turned out to be in reality cases of cerebral syphilis. In his work he refers to a case of Hitzig in which, in addition to the alternative phases, the delusive ideas were of the dementia type as in paresis, but the evolution of the disease compelled him to abandon the diagnosis of paresis. In the differential diagnosis the physical signs of paresis, as well as the state of the spinal fluid, and the Wassermann test on the blood and on the spinal fluid will be of great assistance.

Another difficulty in differentiating paresis from other psychoses is encountered when the morbid condition is stationary. Gaupp[12] is of the opinion that when a case of suspected paresis remains stationary it is invariably not paresis, but cerebral syphilis. In the diagnosis of manic-depressive insanity in syphilitic individuals it is important to lay special emphasis on the occurrence of hallucinations. Kraepelin and Finckh[7] believe that the latter are pathognomonic of syphilis and that the alternating psychosis is syphilitic in nature. Saiz[13] is firmly of the opinion that syphilis per se is capable of causing a manic-depressive psychosis. Raymond and Janet[14] report a case of manic-depressive psychosis in a case of hereditary syphilis. The six cases reported by me can also be placed among those recorded by authors mentioned. Particularly interesting are the three cases in which hallucinations were present, and especially instructive is the parallelism between the latter and the cytologic formula of the spinal fluid.

As previously discussed, although the subject of the direct relationship of syphilis to the alternating psychosis is not definitely established, nevertheless there are strong presumptions in favor of such relationship, particularly in cases which present hallucinations.

An association of syphilis with mental manifestations of the paranoid type was observed in three cases of my series. They were all in young individuals. The onset, the histories of the patients prior to the final outbreak, the evolution of the manifestations and their character were all analogous to the dementia praecox group of the paranoid variety. Kraepelin and Plaut[9] observed a number of cases in which many years after the initial syphilitic infection symptoms developed which are frequently found in dementia paranoides. In spite of their efforts to trace symptoms which could be attached to syphilis, but not to dementia praecox, they apparently have not fully succeeded. In reading their records one fails to find pathognomonic features on the basis of which a special clinical picture could be constructed. In Plaut's cases, physical symptoms were present, and this circumstance according to him should enable one to differentiate from the dementia praecox with a constitutional basis. But in Kraepelin's cases, which in general presented clinical pictures similar to those of Plaut's cases, physical symptoms were totally absent. Both authors, however, observed a few manifestations which, in their onset, mode of development and course, present a picture somewhat different from that of the classical dementia paranoides. They call attention to the absence of gross disturbances of the personality of the will and of the attitude and demeanor. The delusions develop rapidly and they are poor in their contents. The hallucinations are chiefly of the auditory type. Orientation is good except for a few brief episodes of cloudy consciousness. There is present a certain amount of realization of the disease alongside of a pathologic indifference to surroundings. Sometimes in the course of the disease there may occur apoplectiform attacks such as we observe in cerebral syphilis. The condition runs a very slow course and gradually dementia sets in. Then catatonic manifestations appear.

Among all these symptoms Kraepelin lays special stress on the hallucinations, which, in the syphilitic cases are, according to him, unusually intense. One of his patients, a girl of 21, having all the symptoms of hereditary syphilis with a positive Wassermann reaction, presented a persecutory delusion with multiple hallucinations, especially of auditory character. A superficial glance at this description will lead one to

7. Finckh: Centralbl. f. Nervenh. u. Psychiat., Nov. 15, 1906, p. 865.
8. Westphal: Allg. Ztschr. f. Psychiat., 1908, p. 829.
9. Plaut: Centralbl. f. Nervenh. u. Psychiat., September, 1909, p. 659.
10. Mosny and Barat: Encéphale, 1910; T. I., p. 720.
11. Ziehen: Centralbl. f. Nervenh. u. Psychiat., 1906, p. 653.
12. Gaupp: Centralbl. f. Nervenh. u. Psychiat., 1907, p. 696.
13. Saiz: Untersuchungen über die Etiologie der Manie, Berlin, 1907.
14. Raymond and Janet: Arch. de neurol., October, 1903, p. 355.

believe that all the elements of genuine dementia praecox are present, but a more careful analysis will reveal that the resemblance is not profound.

In dementia praecox, with a constitutional basis, the delusional phenomena are frankly absurd and are not the result of cerebral effort. There is no desire on the part of the patient to know exactly the causes of the persecutory ideas, which appear usually as a result of sudden, extravagant and incoherent ideas subservient frequently to various hallucinations. The loss of intellectual activity, the negativism, the impairment of affectivity, the loss of orientation, the loss of the will which is manifested in rigid movements, are all the fundamental features of the classical form. Finally the delusional ideas do not, in the least, alter the attitude of the patient, so that some of them forget entirely their delusions. They all terminate in a state of brutishness and total indifference to surroundings.

If a comparison is drawn between this picture and that occurring in cases with syphilis, the contrast is striking. One must admit from the records so far published that syphilis is capable of developing a syndrome resembling dementia praecox, but not actually identical with it, and that we are dealing here with a special form of cerebral syphilis. The three cases observed by me presented many features in common. The resemblance to the classical dementia praecox was merely a resemblance, but not an identity. Delusions of a persecutory character were present in all, but they were not of a persistent character. Hallucinations were auditory, visual and hypochondriacal in the same patient. They were conspicuous and persistent. Orientation was fair. The attitude and demeanor were in general fair. The patients took at times a certain amount of interest in the surroundings. It was evident that no gross disturbance of personality was present for a long time until three and four years later, when signs of dementia commenced to make their appearance. Moreover, two patients had on several occasions attacks of aphasia, which were all of a transient character. In only one case were physical symptoms present, namely, irregular and unequal pupils and difficult micturition. In all three patients the tendon reflexes were increased. Finally two of the patients showed improvement after several intraspinal injections of salvarsanized serum. The third case remained uninfluenced by the treatment. The history of the latter presents some interesting features.

CASE 8.—J. B., a man, aged 29 years, had a chancre at the age of 18. He was a mechanician by trade and had always been energetic, but about a year ago he commenced to neglect his work, would sleep late and complained of feeling tired. He was very irritable. Soon he became somewhat indifferent as to whether he lost his position or not, and no amount of reasoning could arouse him to his obligations toward his family. Soon he was found suffering from insomnia. He would pace his room or would go out on the street and wander aimlessly in the middle of the night. On several occasions he disappeared for a few days. Questioned as to his whereabouts and as to the reason of his conduct, he could not give an adequate explanation. He was observed very frequently to burst out laughing without the least provocation. His mother happened to fall down the stairs and sustained a concussion of the brain. She was unconscious for many hours. The patient witnessed the accident, but manifested no grief. He remained impassive and indifferent. The next day, however, he inquired about his mother's condition and became quite solicitous. He advised keeping her warm and having a physician to treat her. This awakening of sympathy was not deep enough and lasted but a couple of hours. The condition of indolence and apathy to his surroundings and to himself soon returned. Rapidly he developed hallucinations. He was found frequently at night and sometimes during the day with his ear close to the wall listening attentively and frequently becoming agitated while listening. Suddenly he would jump away from his position and run to the other wall and assume a hostile and threatening attitude as if ready to meet an attack of an enemy. Sometimes he would speak loudly, using profane language, swearing and cursing, keeping up his aggressive position. Two weeks later he apparently developed visual, in addition to the auditory, hallucinations, as he was seen to run aggressively from one part of the house to the other. He soon developed delusive ideas. He accused his mother and sister, also the attendant, of conspiring against him, of sending some persons to torture him and to threaten him. All this was true, he said, because otherwise he would not have heard so persistently those voices day and night. In spite of his apparent preoccupation and concern about the voices, as soon as stranges would call and approach him he would fall again into a state of apathy and would hardly reply to questions asked. If at times he would answer, the replies would be utterly absurd. He would frequently be unable to recognize his own people or old friends. Soon he developed a great desire for writing. He remained in his room for hours and would write incessantly. While his papers showed considerable confusion, nevertheless some expressions denoted a tendency to think of things and events in an expansive manner. He frequently mentioned "hundreds of banks"; "rows of houses"; "the great personages of England"; "like Napoleon I," "to conquer a hemisphere"; "to convert the whole world." Frequently were found such expressions as: "I have just heard them say they will come again tonight and pull all the wires out of me." For many months the hallucinations predominated in the entire morbid picture. He was given two intraspinal treatments with neosalvarsanized serum at an interval of two weeks. His condition as regards the hallucinations had, at first, improved, in that these occurred less frequently and with less intensity. The general intelligence showed some amelioration. He commenced to show less disinterestedness when being addressed, and began to take the initiative in asking questions. However, the improvement did not continue long. The patient soon returned to his former mental condition. Moreover, from this time on, the enfeeblement became gradually deeper, and catatonic phenomena became manifest. Negativism, stereotyped acts and expressions, resistiveness, were all present. The delusive ideas were no more in existence. The hallucinations, however, persisted, but with less conspicuousness than formerly, probably because of the accentuation of the dementia.

In this, as well as in the two other cases of the group, we observe an improvement in the hallucinatory phenomena following the antisyphilitic treatment, also a prolonged improvement in the general mentality in two cases and only a brief amelioration in one case.

The problem before us is whether it is justifiable to consider as a nosologic entity a dementia praecox type of syphilitic origin, or can syphilis per se create such a syndrome? In my three cases I found some of the features emphasized by Kraepelin. I found the lack of depth in the delusional ideas. The latter were not obstinately persistent. The hallucinations were unusually persistent and most conspicuous. There was not a complete loss of affectivity throughout the entire course of the disease. The catatonic manifestations became manifest only toward the end in the last case and were totally absent in the other two cases. It seems, therefore, reasonable to contend that syphilis is capable of creating a syndrome resembling that of dementia praecox. On the other hand, the deviation in the typical manifestations, and in the course of the affection, leads one logically to admit another

presumption, namely, that the persons thus affected are potential praecox men, who would have developed the disease in spite of syphilis but in whom the syphilitic infection introduced certain modifications such as emphasized by Kraepelin and observed in my cases. The latter contention appears to be most plausible by virtue of the fact that the clinical picture in such cases is not sufficiently typical of the classical dementia praecox on a constitutional basis.

Another type of cases in my series is seen in the group of involution melancholia. In both cases we find a number of symptoms characteristic of the disease under this title. The patients were middle-aged women and married. One had had five children, all of whom died while young of diseases difficult to determine from the histories given by relatives. The other patient had had four miscarriages and had one living child. Both gave positive Wassermann reactions on blood serum on two different occasions. The clinical pictures in both cases consisted of the usual depression with a state of anxiety, insomnia and anorexia. A state of self-blame in one case for not being sufficiently religious, in the other for masturbation in younger life, were the only delusional ideas. Both presented also marked auditory hallucinations; both heard the voice of the Lord saying they would pay severely for their sins and their families would suffer for the same reasons. The peculiar feature of the hallucinations lies in their transient but frequently repeated occurrence. For days at a time the hallucinations would be totally absent, and then would suddenly reappear, especially at night. They would then be accompanied by severe headache and a slight rise of temperature. A lumbar puncture during the hallucinatory periods would reveal a lymphocytosis of the spinal fluid, namely, twenty-five and forty cells in the respective cases. It was evident that the periodic hallucinatory condition with the headache was due to an acute meningeal reaction. Both patients had, respectively, two and three intraspinal injections of neosalvarsanized serum, and improved considerably. As the treatment could not be continued, the former condition returned in both cases. One patient eventually committed suicide, the other is at present in a state of dementia. At the onset of the disease both patients presented a mild state of depression, which, together with a positive Wassermann reaction, naturally led to the diagnosis of an oncoming paresis. Such was the opinion on one of the two cases as expressed by a competent neurologist. Subsequent events showed that at no time were there physical signs, neither was there present the mental deficit characteristic of paresis. The characteristic delusional ideas, together with the state of depression, which grew progressively deeper with the absence of dementia for a very long time, all spoke in favor of melancholia. As to the influence of syphilis, it seems to me highly plausible to assume the same position which was taken by me in discussing the paranoid group of cases, namely, that while the two syphilitic middle-aged women suffered from melancholia, nevertheless, it is difficult to associate the mental affection with syphilis as effect and cause. In all probability, syphilis acted here merely as a modifier of the typical course of melancholia. One cannot assert with any degree of definiteness that syphilis per se is capable of creating such a characteristic clinical picture as melancholia.

The last group of my series consists of three cases in which no characteristic symptom of the classical psychoses could be found. If we exclude the paranoid and manic-depressive cases which may or may not present forms of cerebral syphilis, the latter will embrace those cases in which there will be present a great variety of mental manifestations directly connected with and dependable on syphilitic infection. In spite of this multiplicity of symptoms, there are, however, certain special elements which are constantly present and which may be considered almost pathognomonic of cerebral syphilis during its tertiary period. They are a confusional state and a pseudo-demented state. The latter is the most frequent of all. It is characterized either by a mental hebetude, stuporous attitude, amnesia, deficient orientation in time and space, or else by an expansive attitude, optimism, euphoria and a psychic overactivity, to such a degree that it may assume the appearance of absurdity and even childishness. Delusions may or may not be present in either of these states. Syphilis of the brain in its broadest form covers a number of affections in which there is an organic involvement of the cerebrum. Besides the mental distubances there may be also attacks of hemiplegia or monoplegia, of aphasia, or of epileptiform convulsions. They all present no special difficulty of recognition, especially if the blood serum or the spinal fluid gives a positive Wassermann or Lange reaction. The therapeutic test is also of great value, as considerable improvement is obtained from antisyphilitic treatment. Some diagnostic difficulty is observed in cases which present some of the manifestations of paresis, so that for a long time considerable hesitation is experienced in formulating a diagnosis and giving a prognosis. The following three cases may be briefly presented as an illustration of such a difficulty.

Case 9.—A woman of 39 who had three children living and had had four miscarriages was admitted with a very severe headache to the Douglass Hospital. The Wassermann test proved to be negative in the blood serum and positive in the spinal fluid. The cellular count was thirty-five. At first mentally clear, she gradually developed a depressive state, during which she spoke and acted in a very slow manner. Her replies to questions were much delayed and her memory, especially, became affected. She was unable to tell the number and names of her children, how long she had been in the hospital, or how long she had been married. She could not tell correctly the day of the week, the date or the year. She could, however, converse on the weather, could criticize correctly the food, the behavior of the nurses, etc. She was frequently seen muttering some words quietly as if she were conversing with some one. Evidently she had auditory hallucinations. While in the hospital she had two attacks of aphasia of brief duration, one lasting five and the other three days. Among the somatic symptoms the following may be mentioned: The pupils were unequal, but both reacted well to light; the patellar tendon reflexes were increased; the speech was somewhat hesitating. In the presence of such a symptomatology, paresis was the diagnosis first thought of. But the following essential elements spoke against paresis: While her affectivity was depressed, and in spite of the fact that she did not fully realize the gravity of her affection, she nevertheless appreciated the fact that she was ill, and frequently inquired about her discharge from the hospital. She obeyed all the orders of the nurse, and was quiet and undisturbing. There were no delusive ideas at any time. The speech disorder was not distinctly paretic, although it was somewhat hesitating. There was no tremor, and no ataxia was evident at any time. The intraspinal treatment with neosalvarsanized serum proved to be most beneficial. The improvement was very noticeable in the psychic sphere. Amnesia and orientation have greatly improved. She is still under observation, and at this date she has had five injec-

tions. The few somatic symptoms have entirely disappeared, namely, speech, pupils and increase of reflexes.

CASE 10.—A man, aged 41, with a history of syphilis contracted twenty years ago, was admitted to the Douglass Hospital. The Wassermann reaction was positive in the spinal fluid and in the blood serum. On admission he complained of insomnia and frontal headache, but had a smile on his face and a very cheerful countenance. In talking to him over his past life, one is struck by a slight confusion in his sentences. His memory is defective. He cannot recall the name of his last employer, for whom he worked several years; nor could he converse on important topics of the day. In giving dates he made gross mistakes. Asked how long he had been in the hospital, again he answered very inaccurately. What was particularly interesting was the ability of self-criticism. He realized that he was wrong, that he made mistakes, that there was something "wrong with him," to use his own expression. He often laughed at his answers, saying that he felt he was making errors, but he could not help it. At times he was unusually jovial, and spoke of great undertakings, of being on friendly terms with important personages, of being very happy and of wishing for nothing. At the same time he mentioned seeing spirits at night when he said his prayers, but those hallucinations occurred only occasionally. A somatic examination revealed increased knee-jerks, unequal pupils, but responding well to light and accommodation. At times there was nocturnal incontinence of urine. Treatment with neosalvarsanized serum gave prompt relief. After the second injection the confusional element disappeared, the amnesia improved greatly and the euphoria became less pronounced. He is still under observation at his home in another state, whence he sends me communications about his death. They are all free from incoherence and the ideas are expressed in a coordinate and logical manner.

In this case the entire picture of the affection suggested at first paresis, but the evolution of the symptoms, the absence for a long time of characteristic physical symptoms, the rapid improvement and especially the nature of the mental manifestations all were against the diagnosis of paretic dementia.

CONCLUSIONS

An analysis of the cases described in this study tends to show that while the mental disturbances, during the secondary stage of a syphilitic infection, could be considered with a great degree of certainty, as directly dependable on syphilitic toxins, the same degree of certainty cannot be entertained with regard to a direct relationship of psychosis developed during the tertiary period of syphilis. In the former, the mental manifestations are in all analogous to those which we observe in toxi-infectious states from any origin. The confusional and delirious conditions, as well as the hallucinations, ran parallel with secondary manifestations and with fever. When the latter disappeared the former commenced to improve. Besides, the antisyphilitic treatment had a very manifest and favorable effect on the mental phenomena. In the other series of cases we find various psychoses which developed many years after the initial infection and which in all respects presented the typical pictures of classical psychosis, such as Korsakoff's syndrome, manic-depressive insanity, melancholia and dementia paranoides. Great difficulty is encountered and no definite opinion can be formed with regard to a direct relationship between the psychoses and the infection which occurred many years previously. On the other hand, it has been observed that those psychoses in syphilitic individuals presented some modifications which could justly be attributed to the influence of syphilitic toxins. In the light of our present knowledge we are not warranted as yet to claim for syphilis the ability to create per se the well established forms of insanity which we observe without a syphilitic infection. The literature on the subject is very meager, and a considerably larger number of carefully collected records will be necessary to enable us to establish in a more definite way a causal relationship of syphilis to psychoses. For the present, no final claim can be made as to a type of mental disease characteristic of syphilis. On the other hand, from the observations which we possess we are not authorized to reject entirely the possibility of psychoses being the result of syphilis.

1812 Spruce Street.

ABSTRACT OF DISCUSSION

DR. E. E. MAYER, Pittsburgh: Does any one doubt that the same psychotic symptoms may be due to different causes, toxic, psychogenetic or inflammatory? Does any one doubt that a patient with paresis may have another type of psychosis also? Perhaps I did not follow Dr. Gordon's reasoning closely; however, it is always a mistake to establish a diagnosis if by doing so we ignore the possibility of another syndrome being present which is not directly due to the same causal agency. It is this faulty judgment which I gather Dr. Gordon is speaking against. But again, what psychiatrist does not know that his argument is true without it being necessary to cite a multiplicity of cases to prove it.

DR. C. R. WOODSON, St. Joseph, Mo.: There is a syphilitic condition unlike that of paresis in which patients who do not recover live many years. I remember cases twenty-five years ago, before the Wassermann reaction or salvarsan treatment were known. A man came under my observation confused and depressed, with symptoms of cerebral syphilis. I placed him on mercury and mercury inunctions, with 1,000 grains of potassium iodid daily for two or three months. He made a satisfactory recovery and remained well. I have seen him twice yearly for twenty-five years. One of our surgeons had a syphilitic patient who had not been treated vigorously. He came to the hospital with pronounced insomnia and in a maniacal condition. Large doses of iodids, 1,000 grains daily, with mercury were given, and he made a splendid recovery. Many patients come into the hospital with a positive Wassermann test, monoplegia and other symptoms of cerebral syphilis, In some atypical cases it is hard to diagnose a case of paresis from syphilis of the central nervous system. I do not believe paresis is curable. I have seen marked temporary improvement, followed by death from some intercurrent affection, or relapse and death from paresis.

DR. CHARLES R. BALL, St. Paul: It is difficult for the physician in dealing with syphilis to differentiate between symptoms due to syphilis and symptoms caused by other diseases which they may have and which have no connection with their syphilis. Because a patient has had syphilis is no reason for regarding him as immune to other diseases. A syphilitic is just as susceptible to a psychosis or neurosis, after having had syphilis, as he was before he had it, and perhaps more so, because the syphilis itself tends to make him more introspective. Dr. Gordon brings this point out clearly in his paper. We must be quick to distinguish in syphilitics those mental disturbances which are caused by syphilis and those which occur incidentally in connection with it. In making this distinction the serobiologic reaction will be found invaluable.

Recently I had a patient with a typical simple melancholia; fifteen years before he had suffered a similar attack; twelve years previously—three years after his melancholia—he contracted syphilis. The serobiologic reactions were all negative. In spite of this the patient insisted on connecting his syphilis with his present trouble. He would take no medicine whatever except mercury in some form. He finally left me to place himself under the care of some one who would administer mercury to him in heroic doses.

Dr. Alfred Gordon, Philadelphia: Syphilitic individuals, in spite of the syphilis, and not on account of it, may present symptoms resembling ordinary psychoses. They may present a picture of manic depressive psychosis, dementia praecox and others. The syphilitic patient may have all sorts of diseases, and when we do investigate for syphilis and the tests are positive we can improve the patient's condition. One often finds, on close observation, modifications of classical symptoms, and this is due to some modifying factor such as syphilis. I have no illusions as to the cure of syphilis of the central nervous system. I am not optimistic to that degree, but I am far from convinced that the last word has been spoken. I think we can often improve the condition. While my paper is largely technical, there is a practical side, namely, the findings of modifications in the typical clinical pictures and thereby a possibility for improvement by antisyphilitic remedies.

INTRAVENOUS GLUCOSE INJECTIONS IN SHOCK *

JOSEPH ERLANGER, M.D.
ST. LOUIS
AND
R. T. WOODYATT, M.D.
CHICAGO

In accordance with a prevailing opinion, the low blood pressure in "shock" is associated with a diminished effective volume of blood in the vessels, and the two factors constitute in themselves essential parts of the shock mechanism. On this assumption, benefits should result from procedures having the effect of holding water within the vessels. In normal individuals it is possible to accomplish this by effecting an entrance of glucose into the blood at appropriate rates sustained for sufficient lengths of time. Marked hydremic plethora and striking increases of the systolic blood pressure may thus be produced, and the present study has shown that the mean arterial pressure may also be elevated in this way. Glucose is, moreover, a food; it is capable of increasing the power of involuntary muscle contractions, elevating the total metabolism, combating at least one type of acidosis, and restoring depleted glycogen reserves. Has it a value in the treatment of cases of shock?

During the past two years, Woodyatt, with Sansum and Wilder, has studied the physiologic effects of sustained intravenous glucose injections at known rates, and applied the method to several clinical conditions, including two cases having features of shock. Favorable results in these cases made it appear desirable to study a longer series under conditions permitting more exact observations. This was not possible with the available clinical material, and it was decided to test the principles in cases of experimental shock in animals. Erlanger and his associates have during the summer performed some sixty experiments on shock in animals with special reference to the circulatory phenomena and the vasomotor mechanism. A large number of records for control purposes and a perfected technic were thus available. The primary purpose of the work here reported was to ascertain how the symptoms of experimental shock in dogs might be influenced by intravenous glucose therapy. Incidental observations were made on the effects of salt solutions, salt and carbonate solutions, and epinephrin. The work was done in eight days, and no attempt is made to give this report the character of a completed study. The possible differences between the conditions induced in dogs and that of shock in human cases is appreciated, as also the fact that the slow intravenous injection of glucose in postoperative conditions is not a new procedure.[1]

PHYSIOLOGIC PRINCIPLES

When a single dose of glucose is injected into a peripheral vein, there is a temporary increase of the total quantity of sugar in circulation. The injected sugar passes rapidly out of the blood into the tissues. During its stay in the vessels, the blood volume rises and a state of hydremic plethora develops, owing doubtless to the binding of water by the extra glucose in the vessels. This is shown by a fall in the hemoglobin percentage, and a coincident fall in the blood sugar percentage following an initial rise. These facts were demonstrated by Brasol[2] in 1884, and confirmed and amplified by Biedl and Kraus,[3] Starling,[4] Kleiner and Meltzer, and others. Similarly during the period of absorption following the alimentary administration of glucose there is at first a rise but later a return to the normal of the blood sugar percentage, and simultaneously with the latter a fall in the hemoglobin percentage.[5] In shock cases it is frequently impracticable to secure the entrance of glucose into the blood through the alimentary tract, nor is the subcutaneous injection of glucose a harmless clinical procedure. If glucose is injected into the peripheral venous blood of a normal resting (unanesthetized) individual at or below the rate of 0.8 to 0.9 gm. per kilogram of body weight per hour, the injection may be sustained in most cases for hours without causing glycosuria.[6] With injections of 0.9 gm. or more of glucose per kilogram per hour, glycosuria develops, and the rates of sugar excretion then bear definite relationships to the rates of injection. The higher the absolute injection rates, the higher the absolute rates of glycosuria.

During sustained intravenous injections at or below the tolerance rate, glucose passes from the blood into the tissues and there undergoes chemical change (polymerizations, oxidations, etc.) at the same rate as that of injection. There is no material accumulation of glucose itself in the tissues. Injections at subtolerant rates therefore have the effect of increasing the quantity of glucose in the blood without producing any considerable increase of the glucose in the tissues. The result is a disproportionate increase of the power of the blood to hold water, and a state of hydremic plethora develops and presumably persists as long as the injection is sustained. The water held by the blood must come from the tissues or from the injection site or both. If the water injected with the glucose is not sufficient to satisfy the glucose in the blood, some water will flow into the blood from the tissues. When the glucose injection is stopped and the last of the injected glucose passes into the tissues, the water pre-

* From the Physiological Laboratory of Washington University Medical School, St. Louis, and the Otho S. A. Sprague Memorial Institute Laboratory for Clinical Research, Rush Medical College, Chicago.

1. Kausch: Deutsch. med. Wchnschr., 1911, **37**, 8.
2. Brasol: Arch. f. Physiol., 1884, p. 211.
3. Biedl and Kraus: Wien. klin. Wchnschr., 1896, **9**, 55.
4. Starling: Jour. Physiol., 1899, **24**, 317.
5. Compare Gilbert and Baudouin: Comp. rend. Soc. de biol., 1908, **65**, 710. Fisher and Wishart: Jour. Biol. Chem., 1912, **13**, 49.
6. Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, The Journal A. M. A., Dec. 11, 1915, p. 2967. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med., February, 1917, p. 311. Sansum and Woodyatt: Jour. Biol. Chem., 1917, **30**, 155.

viously held in the blood is to a large extent discharged suddenly into the urine. This whole phenomenon differs essentially from that obtainable with inorganic salt solutions, because such salts when injected also pass into the tissues, but when once there are not destroyed. There is therefore the possibility of salt accumulations in the tissues holding water there, and in part counteracting the effects of the salt in the blood stream.

With sustained intravenous glucose injections at rates higher than 0.8 to 0.9 gm. per kilogram per hour, the glucose utilization fails to keep pace with that of injection and the tendency is toward some accumulation of unchanged glucose. If the kidneys are functioning actively this glucose appears on the urinary side of the renal membrane and tends to collect water in this locality, probably for the same reason that glucose in the blood produces hydremia.[7] This tendency is expressed as polyuria. Now if the diuresis exceeds the rate of water administration, water will flow from the tissues to the blood and thence to the urine, and hydremia will be sustained, as long as the water supply is adequate. But if the kidneys do not function in this way, most of the unchanged fraction of the glucose injected remains in the body and tends to behave like a salt, causing accumulations of water in the tissues and body spaces wherever it may go. In shock cases the secretion of urine is likely to be impaired. Accordingly the most rational application of intravenous glucose injections in shock would appear *a priori* and on theoretical grounds to consist in long sustained uniform injections at subtolerant rates. Just what the tolerance limit will be in any pathologic condition cannot be stated. When the kidney function is impaired the rate of injection necessary to produce glycosuria cannot be used as a criterion. The most appropriate injection rate might be expected to lie within the normal tolerance limit at possibly 0.3 to 0.6 gm. of glucose per kilogram of body weight per hour. For a man weighing 50 kg. this would imply the injection of from 15 to 30 gm. of glucose per hour, corresponding to from 84 to 168 c.c. of 36 per cent. solution hourly, or twice these quantities of 18 per cent. solution. Although moderate accumulations of unchanged glucose in the body might do no harm or perhaps even prove desirable, it has been noted in the experiments on shock in dogs, produced by occluding the inferior cava, that a general hemorrhagic tendency supervenes when the administrations are excessive.

EXPERIMENTAL

The solutions injected consisted of chemically pure glucose in strengths of from 18 and 36 per cent., to which on occasions epinephrin was added, of 0.9 per cent. sodium chlorid, and of an alkaline saline solution, 0.3 per cent. anhydrous sodium carbonate in 1.4 per cent. sodium chlorid solution (Fischer's solution). Whenever possible the physiologic sodium chlorid solution was injected either just before or just after the glucose as a control to the direct volume effects of the latter. The injections were made centrally into the vena saphena at a practically constant rate by means of an apparatus devised by Woodyatt.[8] Continuous records were made of the pressure in the carotid artery by means of a mercury manometer. Dogs were used exclusively. They were anesthetized with ether. In some experiments the rate of secretion of urine was followed, a catheter being passed into the bladder for this purpose.

Only one experiment has been done on a normal animal. The glucose solution (36 per cent.) was injected for a period of thirty minutes at the rate of 0.8 c.c. per minute (1.78 gm. of glucose per kilogram per hour). The injection raised the arterial pressure, but not more than from 5 to 7 mm. of mercury. The pulse amplitude, however, increased quite appreciably, indicating the development of some plethora. The maximum effect seems to have been attained during the first five to ten minutes of the injection, and was maintained for ten or more minutes after completion of the injection. The slightness of the rise of the pressure in comparison with the considerableness of the increase in blood volume, indicated by the change in pulse amplitude, probably is to be attributed in part to a diminution in the viscosity of the blood, due to hydremia, and in part to vasomotor accommodation.

The animal was then bled to the extent of 150 c.c., and after the pressure had become constant, well below the normal level, glucose was again injected at the same rate, but for a period of twenty minutes. During the injection period the pressure rose from 107 to 120 mm. of mercury, and during the succeeding ten minutes it continued to rise, finally reaching 125 mm. of mercury. It then declined to 111 mm. of mercury in the course of the next thirty minutes. The pulse amplitude was increased. Salt solution injected at the same rate raised the pressure only 5 mm. of mercury, without appreciably changing the pulse amplitude.

It is inferred from this experiment that in normal animals the compensatory mechanism tends to hold the arterial pressure close to the normal level during the plethora determined by the glucose solution; but that when, as after hemorrhage, the efforts of a normal compensatory mechanism fail to hold the pressure up, the same hydremia results in a more marked rise of pressure.

The rate of injection employed in this experiment would lead in the unanesthetized dog to a glycosuria of some 0.5 gm. per 10 kg. per hour, and this would cease within fifteen minutes after the discontinuance of the injection. In this anesthetized animal, however, the injection caused a heavy long lasting glycosuria and a coincident hyperdiuresis of such a grade that in the course of the experiment more water was excreted by way of the kidneys than was injected into the circulation.

In six experiments the effect of the injection of glucose in different doses was followed after shock had been produced by temporary partial occlusion of the inferior vena cava.[9] Our previous experience with this method of inducing shock justifies the statement that when, after deocclusion of the cava, the arterial pressure eventually begins consistently to decline, this decline proceeds, almost invariably, without break until the animal dies, though the pressure at which the decline begins may be only 20 mm. of mercury below the normal level. Despite the fact that the arterial pressure rises quite appreciably with deocclusion, we are inclined to believe that the damage that has been done to the tissues during the period of occlusion is irreversible. That is to say, despite whatever may be done, the cells of the body eventually will fail to carry on the functions necessary to the life of the organism.

7. Sansum and Woodyatt (Footnote 6).
8. Woodyatt: Jour. Biol. Chem., 1917, **29**, 355.
9. Janeway and Jackson: Proc. Soc. Exper. Biol. and Med., 1915, **12**, 193.

In such an event, the only result that could be anticipated from any form of treatment would be but a temporary improvement of certain of the functions.

Our tests of the action of glucose were begun in that stage of the experiment in which the pressure begins consistently to fall. The persistence of heavy glycosuria in the normal but anesthetized dog for hours after a twenty minute injection at the rate of 1.8 gm. of glucose per kilogram per hour indicates that such a rate of infection in shocked animals which pass no urine must result in an accumulation of free sugar in the organism. The first intravenous dose at supertolerant rates must therefore give the clearest indications of what the injection of sugar is capable of accomplishing. In the table are collected the results of the first injections with the animals in shock. In evaluating the effect of the injections on the blood pressure, account must be taken of the fact that such changes as occur are built up on a pressure curve whose general tendency is to decline with time. In the construction of this table an attempt has been made to indicate this fact. For example, it is seen in the table that in Experiment 3, in which the greatest rise of pressure was recorded (from 55 to 100 mm. of mercury), the pressure at the start of the injection was practically stationary, presumably as a result of the action of salt solution injected immediately preceding the sugar injection; while Experiment 5, in which the smallest rise was recorded (from 72 to 76), was one in which the arterial pressure was falling quite rapidly at the time the glucose injection was started. The other pressure increases ranged between these extremes. On account of the difficulties just mentioned, the determination of the duration of the sugar effect on the pressure is not a simple matter. In at least two cases the maximum pressure is attained some time after the cessation of injection; and whereas in some of the other cases the maximum pressure is attained during the period of injection, the pressure curves are of such a form as to indicate that the effect is manifesting itself not alone during the whole of the injection period, but for some time subsequently.

The table also shows the effect of the sugar injection on the pulse amplitude. This is invariably increased by the injections, and the persistence of the sugar effect is brought out more clearly by the changes in pulse amplitude than by the changes in pressure. Thus in Experiment 6, whereas the mean pressure begins to fall five minutes after the cessation of injection, and in thirty minutes has returned to its previous level, the pulse amplitude at that time has not nearly declined to its previous value. This greater persistence of the effect on the pulse amplitude than that on the arterial pressure is seen best, however, after the second and third injections.

RESULTS OF THE FIRST INJECTION WITH THE ANIMALS IN SHOCK

Experiment Number	Normal Mean Carotid Pressure	Pressure at Time of Injection*	Injection Period, Min.	Pressure Rise		Pulse Amplitude Increases		Dosage				Action Subsequent to Injection	Remarks
				To Mm. Hg	In Min.	From Mm.	To Mm.	Per Kg. per Hour, Gm.	Percentage Solution	Rate of Injection, C.c. per Min.	Injection Period, Min.		
1	159	51 and falling	73	69	45	1.5	3.0	0.57	18	1.0	73	The pressure is falling during the last 20 minutes of injection	Sugar injected immediately after salt solution, which had kept the pressure constant
2	140	64 and falling	68	96	68	3.5	4.5	3.7	36	1.85	68	Pressure immediately falls slowly, and, after 10 minutes, rapidly	Sugar injected immediately after salt solution, which had failed to maintain the pressure
3	117	55 and stationary	25	100++	45++	4.0	5.5	3.6	36	2.0	25	It would appear as though this animal was coming out of shock; the rise of pressure stopped only when the cava was again occluded	Immediately after 20 minutes salt injection which raised pressure 4 mm.
4	195	61 and falling	25	70	†	5.0	8.0+	2.2	36	1.0	25	.....	A previous salt injection had temporarily raised the arterial pressure 4 mm. Hg
5	142	72 and falling quite rapidly	23	76	14	6.0	6.5	3.0	36	2.0	23	.....	Pressure can be raised only by epinephrin despite the considerable increase in pulse amplitude by subsequent sugar injections
6	110	66 and falling	30	88	35	4.0	7.0+	4.0	36	2.0	30	Pressure falls rapidly after 5 minutes elapse	
8	122	78 and falling rapidly ‡	25	86	45	5.0	8.0+	3.7	36	2.0	25	Pressure falls rapidly	

* The pressure usually is uninfluenced by the sugar injection until from five to ten minutes have elapsed. This is the pressure at the moment the injection begins to cause the arterial pressure to rise.

† This was immediately followed with a stronger solution of sugar for seventeen minutes by which the pressure was raised only to 62 mm. Hg. Then epinephrin was added to the sugar. This raised the arterial pressure to 97 mm. Hg; but when the epinephrin was withdrawn, while the sugar injection was continued, the pressure fell in the course of twenty-nine minutes from 97 to 49 mm. Hg.

‡ Salt solution for twenty-five minutes did not appreciably modify the pressure curve. Ten minutes later, while the pressure was rapidly falling, sugar injection was begun. The pressure continued to fall but at a decreasing rate, and had just begun to rise at the end of the twenty-five minute period of sugar injection. As indicated, it continued to rise for twenty minutes.

The dosage of glucose has ranged between the extremes of 0.57 gm. per kilogram per hour and 4 gm. per kilogram per hour, that is to say, between a so-called subtolerant dose and one five times exceeding the tolerant dose. All injections resulted in a rise of pressure, which invariably was much greater than that caused by the control injection of salt solution, which often, indeed, gave an inappreciable response. Owing, however, to the difficulties mentioned, it would take a much larger series of experiments than we have performed to determine the optimum dose of glucose.

After a beginning has been made in the induction of shock by occlusion of the cava, urine secretion ceases despite the injection of sugar in doses which, in the normal animal, cause a marked diuresis. Urine was not secreted even when the alkaline hypertonic salt solution was injected.

A few tests have been made, but usually quite late in the course of the experiments, of the effect on the arterial pressure of injecting an alkaline saline solution. These tests were made only casually, and no hard and fast conclusions can be drawn from them. So far as we have gone, however, at the rate of injection employed, no obvious effects could be discerned.

We also have occasionally combined epinephrin, in concentrations ranging from 1 : 100,000 up to 1 : 25,000, with the glucose solutions. These injections also have been made late in shock. While they raised the pressure further, and possibly increased the pulse amplitude more, than the injection of simple glucose solutions, their effect was very transient and they seemed to leave the pressure at a lower level than it would have reached in the same time if nothing had been injected.

In only one case have we succeeded by the injection of sugar in turning a falling pressure into a rising pressure tending to attain the normal level. The animal in which this occurred was particularly resistant to the effects of occlusion of the cava. Whereas a two-hour partial occlusion of the cava in our experience ordinarily suffices on deocclusion to leave the arterial pressure well below the normal level, and to start the pressure on a downward course within forty or fifty minutes, in this case the arterial pressure returned to the normal level after deocclusion within twenty-five minutes. After a second period of occlusion lasting forty-five minutes, the arterial pressure was still rising fifty-five minutes after deocclusion. The same was true after a third period of occlusion. It was only after the fourth period of occlusion, which lasted one and three-quarter hours, that the arterial pressure after deocclusion started on a downward course. It was then, after a preliminary test injection of saline which held the pressure practically level, that the sugar was injected. The pressure rose from 55 to 90 mm. of mercury during the injection period of twenty-five minutes, and continued to rise in the after-period, finally reaching 100 mm. of mercury, and it was still rising when, as it was believed that the animal had recovered from shock, the cava was again clamped in order again to reduce the animal to shock.

Previous experience in the production of shock indicates that when it is induced by temporary partial occlusion of the inferior vena cava, vasomotor tone, in the stage in which we have made the first sugar injections, is either below normal or at the lower limit of normal. In order to determine whether or not the difficulty in obtaining lasting improvement as a result of the injection of sugar is attributable to the damaged state of the vasomotor mechanism, in one experiment the effect of sugar injection has been tested in shock produced by temporary partial occlusion of the descending aorta. In shock thus produced, we judge from experience that the vasomotor tone, at the stage with which we are now concerned, is either normal or above normal. The experiment ran quite smoothly; but here again the action of the sugar, while quite distinct, was as ephemeral as in the majority of our experiments.

In this experiment, urine secretion stopped shortly after the aorta had been clamped, and none was formed until about two hours had elapsed after deocclusion, when, apparently under the stimulus of the sugar injection, 1 c.c. was passed. This is the only instance in which urine was formed after the production of shock in this series of experiments. Macroscopically the urine did not contain blood.

One of the most interesting phenomena brought to light by this series of experiments, and seen best after several injections have been made, is a decline of the pressure, subsequent to the injection, to a level well below that obtained previous to the injection, despite a pulse amplitude which is higher under the low pressure after the injection than it was under the higher pressure preceding the injection. The increased pulse amplitude undoubtedly is a measure of the increase in blood volume. Presumably, therefore, the pressure is lower after than before the injection, despite an increase in blood volume. This condition probably is made possible through a diminution in the vasomotor tone and a decrease in the viscosity of the blood, which together defeat the tendency of the plethora to increase the arterial pressure. It suggests that a relatively inactive vasomotor mechanism responds in the same way to its adequate stimuli as does the normal mechanism. The normal center is, so to speak, keyed to hold the arterial pressure at the normal level. The damaged center is keyed to hold the pressure at a level below the normal. And if the activity of the damaged center is constantly diminishing, the level at which it tends to hold the pressure will also constantly diminish. The reactions of the center, therefore, to increased blood volume, no matter what the new pressure normal may be, will always be such as to return the disturbed pressure to that normal. If this is the case, the combination in the late stages of shock of an increased blood volume with a lower pressure would be accounted for.

Attention should be called to the tendency exhibited by overdoses of glucose solutions to diminish the coagulability of the blood. As a result of this action, wounds which have ceased bleeding may become covered with an ooze of blood, sometimes quite considerable in amount, which remains fluid for some time. In none of our experiments was this secondary hemorrhage serious, but it is a danger which should be kept in mind when sugar injections are employed in the treatment of shock in the wounded.

SUMMARY

1. Glucose injected intravenously at rates varying between 0.5Z and 4 gm. per kilogram per hour for from twenty to sixty minutes into anesthetized dogs reduced to a state of "shock" (by partial temporary occlusions of the inferior cava or aorta) has been observed uniformly to increase the mean arterial pressure.

2. The injections have uniformly produced a marked increase in the pulse amplitude, indicating a condition of plethora.

3. The increase in pulse amplitude has usually been more striking than the increase in arterial pressure.

4. In one case the increase in pressure determined by the injection of glucose continued after the cessation of the injection until the pressure was approximating the normal.

5. A subtolerant dose has raised the arterial pressure and increased the pulse amplitude as effectively as many of the injections made at more rapid rates.

6. With the more rapid injections, a marked hemorrhagic tendency may develop in animals in this condition.

7. No other palpable deleterious effects were observed.

CONCLUSION

On theoretical and experimental grounds supported by some clinical evidence, it would appear that intravenous injections of glucose at appropriate rates are of distinct benefit in certain phases of shock.

SYMPTOMATOLOGY OF THE NERVOUS SYSTEM

IN CHRONIC INTESTINAL TOXEMIA*

G. REESE SATTERLEE, M.D.
AND
WATSON W. ELDRIDGE, M.D.
NEW YORK

Present medical progress tends toward diminishing the number of disease entities rather than toward their multiplication. In no field is this more strikingly apparent than in the newly found and rapidly developing relationship between mental and nervous conditions and disturbances of the gastro-intestinal tract.

The symptomatology referring directly to the intestinal tract is not within the scope of this paper. However, it is difficult to find any case in which, on close investigation, symptoms referring directly to the intestinal tract are absent. The error in diagnosis as to the fundamental condition can frequently be explained by the fact that the gastro-intestinal disturbances are so often considered secondary to a disturbed nervous system, when in reality the opposite is true.

As an example of one of the commonest misapplications of diagnosis we mention neurasthenia. It is perfectly true that we may have a neurasthenia brought on by causes not connected directly with the intestinal tract, and in these a functional disturbance of the stomach and intestine may follow. Church and Peterson mention that neurasthenia may be caused by organic conditions such as phthisis, Bright's disease, diabetes, gout, rheumatism, and uremic and toxic states generally. The fact that chronic gastro-intestinal conditions are almost invariably followed by neurasthenia of differing intensities is not mentioned.

For purposes of simplification we have separated the symptomatology of the nervous system in connection with chronic intestinal toxemia into four classes, namely, cases involving (1) the mental system, (2) the sensory system, (3) the motor system, and (4) the sympathetic system. These classes of symptoms may occur separately or in combination, usually the latter, so that we can designate them only according to the predominant symptoms. It would be impossible to say why the toxin resulting from these intestinal conditions should have a selective affinity for any one part of the nervous system, just as it is impossible to ascribe reasons for the localization in other toxic states resulting from tuberculosis, diabetes, gout and syphilis.

It is a significant fact that in practically all of the cases considered in this article the nervous manifestations have either cleared up or have been markedly improved by treatment directed toward the intestinal toxemia. A great many of these patients have been treated by the usual therapy for disorders of the nervous system, without result. This is not in the nature of positive proof, but is very strong evidence as to the etiology of the disturbances of the nervous system in these cases.

In considering the cases exhibiting mental symptoms, we have divided them into two groups, intellectual and psychic. Under the intellectual group we find sluggishness of mentality, dulness and stupidity, loss of concentration, loss of memory and mental incoordination. In the psychic group are included irritability, lack of confidence, excessive and useless worry, exaggerated introspection, hypochondriasis, phobias, depression, melancholic states, obsessions, delusions, hallucinations, suicidal tendencies, delirium and stupor. Of 518 cases studied for this paper, 201 exhibited irritability, 317 depression, 4 obsessions, 1 dual personality, 5 hallucinations, 4 delusions, 12 hysterical coma, 74 deep melancholia, etc.

There is no group of mental symptoms that can be said to be diagnostic of intestinal toxemia. The mental symptomatology is rather complex and may assume any one or more of the symptoms of a primary mental condition, or of syphilis. These must necessarily be excluded. As an example of mental disturbance illustrating both intellectual and psychic symptoms, the following case history is of interest:

REPORT OF CASES

CASE 1.—*History.*—Miss L. E., aged 46, a schoolteacher, had been constipated sixteen years following an attack of nervous prostration. The symptoms, which began at this time and had become progressively worse up to the time when she was first seen, were intense headaches, hemicranial in type; she felt as if she had two brains, one side normal and the other side abnormal. Severe melancholia, with violent outbreaks, which was progressive, kept the patient from teaching. Twelve years ago curettage was done. Eight years ago, after a diagnosis of uterine fibroids, a hysterectomy and appendectomy were performed with no improvement. For five years she took morphin, in increasing dosage, for relief from pain in the head. She always felt uncomfortable in the abdomen, especially when standing. Ability of mental concentration was partially lost. She was much depressed.

Examination.—The roentgen ray revealed a water-trap stomach with one third retention at seven hours. The small intestine was intensely rapid. Meal was in the colon in one and three-fourths hours. Both flexures and transverse colon were very low. The urine was constantly normal except for a large excess of indican. Blood pressure for many years was around 240. The Wassermann reaction was negative. Blood analysis, chemically, showed low urea nitrogen, uric acid and blood sugar. Slightly high freezing point of serum. Subsequent chemical blood analysis showed a similar picture, with the exception of a high uric acid retention. Examination of the optic fundus revealed a normal picture. This patient was in a deplorable condition, mentally and physically, and life had become a burden to her. She could work only with frequent long periods of rest.

Treatment.—She was operated on by Drs. Draper and Lynch in August, 1914. The pylorus and duodenum were normal except for some slight thickening. The gallbladder was thickened and contained one stone, the size of a marble. The stone was removed. The transverse colon showed many diverticula, one of which was solidified. This was removed. The sigmoid found bound down in a scar from a previous operation was freed. A partial colectomy (developmental reconstruction) was done. End-lateral anastomosis was effected. A partial Coffey operation was limited to three suspensory sutures to the left. There was no postoperative shock.

After an initial improvement in all symptoms the patient relapsed and came to see Dr. Satterlee four months later. She had returned to work at school against all advice. She was incapacitated again. She was sent to a sanatorium for

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

rest, and given autogenous colon bacillus vaccine. Doses were given weekly, gradually increasing in amount. There was rapid improvement. After a short time she returned to work and remained there while receiving weekly doses of vaccine and general supervision regarding diet and hygiene. One year later the patient said that "although formerly a burden to do a pleasure, it is now a pleasure to do a burden." She was feeling much better and treatment was stopped. Six weeks later she relapsed again and returned for treatment. This caused improvement once more. She continued to alternately improve, stop treatment and relapse until January, 1916, when she had a severe relapse and again went to the sanatorium. She became very melancholic and threatened suicide. She had intense pain in the left side of the head and was very nervous and hysterical. Vaccine gave intense and severe reactions. In March, 1916, she felt so well, and had for the last month or two, that she thought she should be again dismissed from treatment. At the present time the patient is still teaching and feels well unless tired, when she has a rise in blood pressure and a moderate amount of depression.

COMMENT

The interesting features in this case are the excellent results, especially in the mental condition, after removal of the cecocolon, the subsequent diseased condition of the remainder of the colon, and the good results from the administration of the autogenous colon bacillus vaccine. These three things point very strongly to a diseased colon, and the colon bacillus as the causative factors in this patient's condition. The high blood pressure seemed to be partially dependent on the intestinal toxemia. The former was always increased after prolonged fatigue, and at the same time the toxemia increased. The chemical blood analysis and the examination of the optic fundus showed a probability of lack of any advanced renal changes.

The following case history is an example of the predominance of psychic phenomena:

CASE 2.—*History.*—Mrs. S., aged 34, with negative family history, had had three children. There was a history of typhoid and erysipelas. For five years previous to being seen she had been much troubled with gas, pain in the epigastrium and constipation, with extreme tenderness at times to the left of the umbilicus. While on her feet she is comparatively comfortable, but pain begins when lying down. She has the sensation in the early morning hours of being tightly gripped in the left side as in a vise. There is no nausea or vomiting. The patient has lost 40 pounds in the last five years. She has extremely nervous spells and wants to laugh and cry. The desire is hardly controllable at times. She is very sleepless at intervals and when so keeps the whole family awake. Her husband is sometimes at his wit's end to know how to control and keep the patient calm. When very nervous she becomes hysterical and disturbs the neighbors. She screams, laughs loudly, and one time ran down stairs and into the street in her night dress. A roentgen-ray examination revealed a water-trap stomach, and ptosed, sluggish colon. Lavage at one time showed eight hour residue in the stomach.

Diagnosis.—Chronic intestinal toxemia, water-trap stomach and ptosed sluggish colon. After treatment by diet, hydrochloric acid, massage, etc., the patient was operated on. The pylorus was high, fundus low. A long adhesive appendix with constriction was removed. Colon and stomach suspension was done. Seven months later constipation had disappeared and the patient had gained 35 pounds. Nervousness was much improved. There was occasional gas, nausea and eructations. One year later, however, the nervousness returned in marked degree and there was troublesome constipation. The patient was not sufficiently careful in diet and habits. She was again put on rigid anticonstipation diet. The foot of the bed was elevated, and exercise and fresh air ordered, with very little improvement. She was then given a course of treatment with autogenous colon bacillus vaccine. At the present time, one year later, reports show the patient to be in good physical and mental condition.

Some cases show a marked predominance of sensory symptoms. These may be classified as paresthesias, hyperesthesias, anesthesias, hyperalgesias, analgesias, myalgia, neuralgia, neuritis, perversions of taste and smell, hyphedonia, and hyperhedonia. In 518 tabulated cases, 421 patients complained of headache, 302 of vertigo, 397 of paresthesias, 387 of myalgia, 379 of "nervousness" and "nervous sensations." We have observed that as a general rule the mental symptoms were more likely to occur in patients who are highly temperamental, and the sensory symptoms in those of a phlegmatic disposition.

The following case history is illustrative of the latter type of individual:

CASE 3.—*History.*—Mrs. C. M., aged 50, was of nonenteroptotic type. She had been strong as a child but subject to "bilious attacks." She was naturally a hearty eater, including meats, and always had more or less trouble with her digestion. The trouble began after the birth of her first child, twenty-one years ago. After the second child, two years later, she had a perineorrhaphy, and five years later an appendectomy and ventral fixation was done. Five years ago she had a bad attack of indigestion. A diagnosis of carcinoma of the stomach was made by the attending physician. The patient lost 18 pounds. She complained that her digestion is never right and that she has always much flatulence and sleeps poorly. There was no apparent constipation until two months before examination, when she had a fecal impaction in her right side. She wakes up at 4 a. m. with headache, pain in the back of the head and neck, nausea and marked eructations. She has pain, as she expressed it, "in every nerve of the body from head to foot." The left arm and shoulder are tender and sensitive and the teeth supersensitive. She has numbness in hands and legs. She is very nervous and has had some depression and loss of concentration. She has polyuria, urticaria, and there is an odor to the perspiration. Her chief complaint is pain in the whole body and soreness in the joints of the fingers and toes.

Physical Examination.—This revealed a muddy colored skin, dry brittle nails and hair, coated tongue, tenderness over the whole colon, splashing and crepitation over the cecum. Roentgenography revealed water-trap stomach, residual cecum and residual sigmoid. She had an enormously dilated rectum. There was no gastric retention.

Treatment.—This consisted of diet, autogenous colon bacillus vaccine, hygiene, local treatment of a rectal fissure and hemorrhoids. There were very severe reactions from vaccine, increasing pain and nervousness, lasting from twenty-four to forty-eight hours. Her symptoms, which have been chiefly neuralgic pains, nervousness, insomnia, and irritability, have been markedly relieved by treatment for chronic intestinal toxemia, which included forty doses of the vaccine. The strong reactions following vaccine administration, and the periods of marked improvement thereafter, were very remarkable and seemed to have a strong bearing on the etiology of the symptoms and on the toxemia.

The third class of cases considered, those showing symptoms of the motor system, are fewer in number than the cases with the mental conditions or those with affections of the sensory system, and form a small percentage of the total number of cases. Among these are the so-called cases of epilepsy, supposedly of intestinal origin. We are by no means able to state with certainty that these cases owe their symptomatology to the diseased condition of the intestinal tract and we are not able to cite any patient cured to date, but we do know that treatment of the diseased intestine itself

and treatment directed toward the resultant toxemia has cleared up the symptoms directly referable to the intestinal tract and has produced, or been coincident with, a vast improvement in the epileptic seizures. When a relapse in the intestinal symptoms has occurred there has almost invariably been a recurrence of the epileptic seizures. We are of the opinion that a surgical procedure, such as a developmental reconstruction of the colon, in our cases under observation, would correct the intestinal condition and cure the disease. This, however, is to be proved. This class of patients will require a large amount of future study before more definite conclusions can be drawn, but the results obtained in the cases to date are very suggestive of a close relationship between these epilepsies and intestinal toxemia. The case history which follows is interesting in this connection:

Case 4.—*History.*—Miss S. K., aged 38, a milliner, brunette, was first seen five years ago. Her family history was negative for epilepsy or intestinal troubles. She had been constipated all her life, had had "indigestion" for twelve years, and was getting worse. At the age of 14 she began to have attacks of unconsciousness in which she would bite her tongue. She had premonitory aurae at times. These came on usually in the middle of the night and in the early morning hours, leaving her feeling weak and exhausted after waking. Appendectomy was performed one and one-half years ago. The left ovary was removed at the same time for unknown reasons. She always takes cathartics at night. She has frequent spells of nausea, vomiting and malaise, with much pain in the legs, knees and arms at times. A marked symptom in this, as well as in a similar case, has been a feeling of soreness, fulness and heaviness in the cecocolon previous to and during the periods of seizure, with accompanying headache.

Physical Examination.—This revealed a prominent abdomen, dilated stomach and large tender cecum. A blood analysis showed high aminonitrogen, with low uric acid, indicating loss of purin metabolism. Hepatic functional test with phenoltetrachlorphthalein intravenously showed a normal 45 per cent. recovery. The urine showed almost constantly high indican content, but few granular casts. Stool examinations revealed many unchanged muscle fibers and faint blood reaction.

The attacks were getting worse and more frequent; five or six every day. She is confined to bed altogether lately owing to these attacks.

Treatment.—The patient has been under close observation for the last five years. During this time the administration of autogenous colon bacillus vaccine has had a good effect in controlling the seizures, but the patient is still subject to relapses. At the time of these relapses the best results have been obtained by proper care of the intestinal tract and renewed injections of the vaccine. A developmental reconstruction of the colon has been constantly considered and frequently urged, but so far has been unobtainable.

The following case history is one in which marked motor nerve symptoms, resembling closely those of tetanus, was caused by strangulation, gangrene and perforation of the ileum.

Case 5.—*History.*—Mrs. F. DeN., aged 30 years, had three weeks previous to examination an incised wound of the finger, which healed. Two weeks before examination she had an attack of severe vomiting lasting four or five days, with constipation. Two days before coming under observation she developed a stiffening and gradual inability to open the jaws. Her physician thought the condition to be one of tetanus and sent her to the hospital.

Examination.—This revealed a well developed and nourished woman in good mental condition, but the inferior maxilla was firmly fixed to the upper, and there was marked stiffness of the neck muscles. There was a small insignificant healed scar on the finger. There was no distention of the abdomen, and no rigidity or tenderness there. The temperature was normal, the pulse 99. The heart and the lungs were normal. No symptoms occurred until twenty-four hours later, although the jaws did not relax. A convulsion then occurred with opisthotonus, complete muscular rigidity and cyanosis, and the jaws relaxed. She was given camphor and oxygen and the condition passed off in ten minutes. Three hours later she became suddenly completely rigid, cyanotic and died. The temperature had risen to 100.5 and the pulse to 110.

The postmortem examination revealed an omentum all curled up in an effort to wall off an infective process in the pelvis. The peritoneum over the whole intestinal tract showed an intense inflammatory condition. Newly formed adhesions matted together the entire tract. There was in the pelvis a gangrenous loop of ileum about 8 inches in length, which was perforated in several places and covered by omental tissue. No cause for this condition could be found, but the most likely thing seemed to be a preexisting volvulus. The brain and coverings were normal except for a mild edema and congestion. Postmortem cultures, aerobic and anaerobic, from the spinal fluid and blood failed to show the presence of any organism.

The conclusions drawn from this interesting case are that it was a toxemia resulting from the obstruction and gangrene of the intestine, and not a case of tetanus.

In 1908, Draper[1] called attention to a similarity between so-called tetany in human beings and the symptoms of duodenal obstruction in dogs, which is interesting in this connection.

The subject of the involvement of the sympathetic system is of such a broad scope that to go into it with any detail except in certain definite phases is impossible on account of its complexity. We have yet to find a case in which there was not present some involvement of the sympathetic system, but in some cases this is much more pronounced then in others. The symptoms that are most characteristic and directly attributable to irritation of the sympathetic system are: (1) the cardiac symptoms, including tachycardia and palpitation; (2) peripheral vasomotor symptoms, such as diminished blood supply to the skin, dry brittle hair and nails; (3) gastro-intestinal symptoms, including disturbances of taste and smell, appetite, nausea, vomiting, changes in the secretion of the digestive juices, constipation and diarrhea, and (4) disturbances in the endocrine system, with hypothyroidism, hyperthyroidism, alteration in the secretion of the suprarenals and other glands of internal secretion.

Direct connection between intestinal conditions and disturbances in the glands of internal secretion are often highly problematic. Of the symptoms mentioned, we find in the order of their frequency constipation, disturbances in skin nutrition, changes in the secretion of the digestive juices, loss of appetite, ageusia, nausea, changes in the rate and rhythm of the heart, with the subjective symptom described by the patient as "palpitation," and the syndrome of hyperthyroidism. The constipation may be the cause or the result of the toxemia. In the latter case this may be due to the disturbance of the sympathetic system.

It is in the disturbances of the nutrition of the skin that we see the first marked improvement from treatment. A dry dusky skin will often become moist and clear after the intestinal toxemia is controlled.

We have found that in all our cases of intestinal toxemia in which there has been a perverted ductless gland system, only occasional improvement has followed the administration of organotherapeutic prod-

1. Draper, J. W.: Observations Upon a Form of Death Resulting from Operations on the Duodenum, Surg., Gynec. and Obst., May, 1906.

ucts. On the contrary, the symptoms coming apparently from a perversion of these glands have been improved by the treatment directed toward the intestinal tract and the intestinal toxemia as the primary cause. As one instance of disturbed glandular system may be mentioned a patient apparently suffering from hyperthyroidism, to whom thyroid extract was administered. The result was a very marked hyperthyroidism. Following this some of the common antithyroid measures were adopted without result. Subsequently the patient made a slow but good recovery under treatment for intestinal toxemia. It is a common thing to see an enlarged thyroid with symptoms of hyperthyroidism subside under the treatment for intestinal toxemia.

CONCLUSIONS

The nervous system is almost invariably affected in whole or in part by chronic intestinal toxemia.

The nervous symptoms are often the most prominent in the symptomatology.

A thorough investigation of the gastro-intestinal tract is essential in cases exhibiting a chronic symptomatology of the nervous system provided the usual obvious factors of etiology of disturbances of the nervous system can be excluded.

Disturbances of the gastro-intestinal system are more often the cause of a nervous symptomatology than the result of a diseased nervous system.

In doubtful cases a proper hygiene and therapy of the intestinal tract will often be the deciding factor in differential diagnosis.

125 West Fifty-Eighth Street.

ABSTRACT OF DISCUSSION

DR. J. RUSSELL VERBRYCKE, JR., Washington, D. C.: It seems to me that the nervous system and the gastric system in autointoxication should be considered in the light of a vicious circle. Either system can start the trouble which can then be taken up by the other, and in my experience, considering either system by itself has not resulted in curing the condition. We have to treat the autointoxication by appropriate measures, and with that we have to employ a lot of suggestion to the patients to keep them encouraged. We really know hardly anything of the actual causative factors of intestinal intoxication. We have not been able to separate the individual poisons; we have, however, some idea of the degree of poisoning in the estimation of indican. There is some difference of opinion as to the importance of indican as an index of intestinal intoxication. Recently, I analyzed a series of several hundred cases in which indican was persistently present, and I found on tabulating these cases that 98 per cent. had two or more of the symptoms which we consider to be those of intestinal intoxications or other intoxications. We know several characteristics of the toxins generated in the bowel. We know they are rapid in action and rapid in excretion. A patient may come to us having marked symptoms of dizziness or headache and after one colonic washing the headache and dizziness may disappear; patients often go out of the office relieved. We know, furthermore, that in addition to the rapidity of elimination the patient builds up a resistance to the intoxication, and a patient who at one time shows constant indicanuria, if he has a recurrence, though it is much less in degree than the first attack, feels it a great deal more. The most common symptoms are referable to the nervous system, and I have found that in 67 per cent. of the cases in which there is inability to concentrate, the analysis will show indican. In my experience patients who do not show indican invariably show regurgitation through the ileocecal valve. These have been the most difficult to treat.

Dr. Satterlee mentioned that some of these cases frequently extended over a period of two years. I confess I would be discouraged before the two years were up, but the average case certainly does not take a very long time to improve. Once in a while, however, we do have a very resistant case.

DR. FENTON B. TURCK, New York: Twenty-five years ago when I took up research work on the alimentary tract two explanations were usually given of the causes of intoxication from the gastro-intestinal tract. One was mechanical obstruction of some form or degree, and where no mechanical obstruction could be shown it was concluded that these cases were of nervous origin. The nervous system was held to be the prime factor causing muscular contraction and rhythmic motion of the stomach and intestines. Physiologists later found, after removal of all nerve supply from the muscles, that rhythmic motion continued the same, the nervous system acting as a coordinating mechanism.

My experiments indicated that not only were the muscle cells the prime factors in physiologic function, but atony was closely associated with a bacteriologic problem, the intestinal flora. I found that the muscle cells which were involved undergo a degenerative change with loss of motor power *pari passu* with venous stasis of the splanchnic circulation. Recently (*Bulletin of the Medical and Surgical Faculty of Maryland*, December, 1916, and *Boston Medical and Surgical Journal*, May 10, 1917) I published some interesting experimental and clinical facts showing that the individual muscle cell is the first to be acted on by the factors which produce chronic atony and dilatation.

Fatigue, distention, venous stagnation, toxic absorption and bacterial permeation serve, each in its turn, to exhaust, stretch, stifle, poison and break down the structural units that make up in their sum the muscular wall. Tissues which have shown the atony of dilatation will demonstrate under the microscope the changes undergone by muscle plasma, and, in many cases, will give unmistakable evidence of the special action of vascular or bacterial factors.

The occurrence of colon bacilluria is often presumptive evidence of absorption in spite of the bactericidal function of the submucous tissue.

To sum up: (1) Muscular inefficiency of the gastro-intestinal tract is the basis of the greater part of chronic perversion of digestive function. (2) Experimental atony and dilatation are brought about chiefly through mechanical distention, fatigue and the multiplication of the intestinal flora. (3) Microscopic sections of atonic tissue show the factors of venous stagnation and the permeation of the intestinal wall by bacteria from the lumen; muscle cells of such tissue under the microscope are seen to be in an advanced degree of degeneration. We have here biologic principles to grapple with.

DR. E. E. SMITH, New York: In a paper on the "Etiology of Idiopathic Epilepsy" by Dr. Herter and myself, published in the *New York Medical Journal*, twenty-five years ago, we called attention to intestinal toxemia as a causative factor in epilepsy, reaching the conclusion that seizures were determined in certain cases by the absorption of toxins from the intestinal tract.

The present views in regard to this interesting subject are conveniently expressed by three types which we keep in mind: First, protein sensitization is the condition which first receives our attention with those patients in whom there are skin eruptions; the second type is the arthritic case, and in these cases attention is first directed to localized foci of bacteria; the third class of cases is the type before us today, the nervous cases, in which we direct our attention to toxemia from absorption of chemical substances from the intestines. These are not fixed types, and one condition may often be found with either of the others.

Relative to the intestinal toxemia, we now know of substances formed by putrefactive processes that are entirely capable of giving rise to symptoms in the nervous system, namely, the amins, and particularly the derivatives of ethylamin. There is an exaggeration of the action of particular glands through the formation of certain of these amins, since

they are similar in their pharmacologic action to the autocoids of the glandular secretions; and we have, as a result, this perversion of the functions of the nervous system.

If the process in the intestine goes on to a point where there is actual bacterial invasion of the tissues of the intestine, then we have a class of cases in which, in addition to chemical intoxication, we have bacterial infection. These are the cases in which the administration of autogenous vaccines, properly prepared, are giving good results; in other words, in those cases in which we have a mixed condition of chemical poisoning and bacterial infection. Thus, we may have in any of the conditions mixed processes that go on and give rise to and explain various symptoms.

Dr. Nathan Rosewater, Cleveland: It has been said, by Dr. Turck, I believe, that a mechanical cause is not sufficient to explain these cases. In cases of headache due to mechanical causes, particularly from constipation, the relief is almost immediate after taking a cathartic or enema, showing that there was a mechanical cause, not a toxemia. If it were toxic it would take twenty-four hours or more before we could remove enough of the toxic matter absorbed from the bowels into the circulating fluid; so that there is a large class of cases of this purely mechanical type. On the other hand, what is required is a differentiation between the intestinal and nonintestinal toxemias, particularly noting the time of day when the symptoms occur and whether mixed or simple in type.

In cases of simple indican, toxic fatigue occurs at any time of the day, lasts any length of time, but may be complicated. There may, however, be an entirely different type not clearly described heretofore. The patient wakes up in the morning after rest and sleep (fatigue antidotes) with a dry mouth, depressed in spirits, feeling tired and aching all over—muscular rheumatism, so called—and yet as a proof that it is not due to fatigue at all, such a patient, who may be a washerwoman, will, after waking up lame and exhausted, do a hard day's work, and will feel better and be entirely free from trouble in the afternoon and evening. Fatigue would not improve with exercise, nor would neurasthenia. We are dealing here with a type of case which resembles, but is entirely different from, indicanemia or neurasthenia, and which occurs in the early morning and passes off during the day, especially with exercise, massage, etc. There are generally, also, pains in these cases which occur in the early morning, and the pain is so severe at times that it must in some cases be distinguished from appendicitis. If the abdominal muscles are touched in the early morning they are very sensitive, but the oftener you press, the less sensitive they are. Such cases are numerous and are due to purin substances in the foods—purinemia—and not to intestinal toxemia. There is no indican excess in these cases. When the patients are taken off of purin foods they rapidly improve; even though subjected to harder work than ever they do not complain of the old feeling of fatigue, which should be called pseudofatigue.

Dr. G. Reese Satterlee, New York: Our paper was not intended to be a discussion on the etiology or treatment of intestinal toxemia. There was an interesting point, however, brought out by Dr. Verbrycke, who spoke of suggestion or mental therapy in these cases. I will say that it is extremely important. I do not believe that any one could hold a patient for two years unless he used suggestion or mental therapy along with his treatment.

I called attention to the length of time it takes for a patient to get over an intestinal operation. It does take at least one or two years, and if we can cure them in two years without an intestinal operation, we are at least doing as well as the surgeons.

We find indican not at all diagnostic. It might be diagnostic of putrefaction. Dr. Verbrycke spoke about the difficult cases of regurgitation into the ileocecal valve. I think they may be associated with indicanuria. We found that patients in a large percentage of cases of chronic intestinal toxemia have no indicanuria. They may have intestinal putrefaction at one time or another, but a great many of the patients do not have ileocecal regurgitation. Every patient has a rectal injection, so we are sure, as far as the technic can go, that we have no regurgitation. Without indicanuria and without regurgitation the patients are fairly easily taken care of.

Dr. Smith very aptly spoke of two kinds of intestinal conditions: toxemias with putrefactive substances, the amins, in the intestinal contents and those in which the wall of the intestine is involved, in which we are dealing with a bacterial infection. In the latter condition he considered vaccines useful. This is exactly what I have brought out. To sum up, intestinal putrefaction in simple cases may be cleared up by catharsis and starvation, and the other more difficult conditions, in which the wall of the intestine is infected, must be handled by diet, mental suggestion, hygiene and autogenous colon vaccines. In our experience the autogenous colon vaccines are most essential.

A NEW COMPLEMENT FIXATION REACTION AS APPLIED TO LEUKORRHEA

A COMPARATIVE STUDY OF FORTY-SEVEN CASES

LOUIS D. SMITH, B.S., M.D.
AND
F. LEE STONE, M.D.
CHICAGO

The difficulty of making an absolute diagnosis of gonorrhea in woman by a combination of clinical history, signs, symptoms and the usual laboratory methods has led us to undertake a comparative analysis of forty-seven cases of women suffering from leukorrhea, employing the usual methods and the complement fixation test devised by one of us (Smith). It is further desired to submit these records statistically, to form a basis of estimate of the value or accuracy of this reaction.

In entering on these experiments, we were immediately impressed with the insecurity and lack of value of all ordinary methods to serve as a criterion for diagnosis to substantiate our findings. For who, by the methods at our command, can with absolute assurance delegate a woman suffering from leukorrhea to the categorical diagnosis of gonorrhea?

In conducting the special test, it was deemed advisable, in order to eliminate bias, to do so without a knowledge of the nature of the case. Accordingly the specimens were submitted in serial numbers to one of us (Smith), and the other data were kept separately (Stone) until after the report of the test, when all ascertained facts were coordinated. In this manner the special test under trial was performed without any guiding influence, and the other laboratory examinations were made without knowledge of the outcome of this test.

The principle of the test involved is that of the Bordet-Gengou complement fixation reaction. In our test the antibody of the bacteriolytic system is supplied by commercial antigonococcic horse serum, and the antigen is the unknown element. This antigen is embodied in the suspension of the leukorrheal discharge which, although gonococci may be few, nevertheless contains the products of their interaction with the tissue and also their own autolytic products. In other words, the principle of the Wassermann test is reversed, in that in the latter the unknown element is the antibody in the patient's blood, and the known antigen is tissue extract, whereas in our test, the antibody is supplied, and the antigen (identical with

the gonococcus or its products) is the unknown factor. Thus employing its principle it is possible to determine at its very inception a gonorrheal infection in male or female, and similarly to determine the time of disappearance of the organism according to experiments we are now conducting.

TECHNIC OF TEST

A specimen of the discharge is collected from the cervix and vagina on a long cotton swab. The swab is immersed in about 2 c.c. of physiologic sodium chlorid solution. The discharge is freed from the swab and ground finely with the sodium chlorid solution in a glass mortar. The suspension thus prepared is permitted to stand over night and then heated at 56 C. (132.8 F.) for half an hour. In appearance a properly prepared suspension exhibits a faint turbidity, to obtain which it may be necessary to add more sodium chlorid solution. Practice will enable one to determine the proper dilution. Floating particles may be removed by a few seconds of centrifuging.

In the test a positive and negative control should be used, each specimen requiring ten tubes (as used in the Wassermann test), consisting of a first and second row of four tubes, and single tubes in the third and fourth rows. In all tubes are placed 2 c.c. of physiologic sodium chlorid solution. To the first tubes of the first and second rows is added 1 minim of the suspension, in the second tube 3 minims, in the third 5 minims, in the fourth 7 minims. In the single tube of the third row are placed 7 minims of the suspension. In all the first row tubes and the single tube of the fourth row is now placed 1 minim of the properly standardized antigonococcic serum. In all tubes excepting the single third row tube is now placed guinea-pig serum (complement) as is done in the Wassermann test. The specimens are now incubated in the water bath for one-half hour at 37 C. (98.6 F.), when the antisheep amboceptor and sheep corpuscles are added and reincubated. Readings are then taken. The first row constitutes the test, the degree of inhibition of hemolysis indicating the degree of positiveness, if the corresponding second row, which is the control for the test row, has completely hemolyzed. The third row tube is a control on a possible hemolytic tendency of the specimen to be tested, whereas the fourth row tube is a control on the anticomplementary action of the antigonococcic serum.

COMPARATIVE ANALYSIS OF FORTY-SEVEN CASES OF LEUKORRHEA *

Case No.	History and Clinical Evidence of Gonococcus Infection	Gram Stained Slides	Smith Test	Blood Examination: Wassermann	Blood Examination: Gonococcus Fixation
1	—	—	—	0	0
2	—	—	—	0	0
3	+	+	+	0	0
4	+	—	+	0	0
5	+	—	+	+	+
6	+	—	—	—	—
7	+	—	+	—	—
8	—	—	—	—	—
9	+	—	—	—	—
10	+	—	+	—	—
11	+	—	+	+	—
12	—	—	—	—	—
13	—	—	—	—	—
14	+	+	+	++++	—
15	+	—	+	—	—
16	+	+	+	—	—
17	—	—	+	0	0
18	+	+	+	—	—
19	+	—	+	—	—
20	+	+	+	—	—
21	+	—	+	0	0
22	?	—	+	—	—
23	+	—	+	+	—
24	+	+	+	0	0
25	—	—	—	—	—
26	+	—	+	—	—
27	—	—	—	—	—
28	—	—	—	—	—
29	+	—	+	—	—
30	+	—	+	—	—
31	+	—	+	0	0
32	?	—	+	0	0
33	?	—	+	—	—
34	+	+	+	+	—
35	—	—	+	—	—
36	—	—	—	0	0
37	+	—	+	—	—
38	—	—	—	—	—
39	+	—	+	—	—
40	—	—	+	—	—
41	+	+	+	+	—
42	+	—	+	0	0
43	+	—	+	+	+
44	+	—	+	—	+
45	?	—	+	—	—
46	—	—	+	0	0
47	+	+	+	0	0

* In this table, + denotes positive; — negative; ? question; 0 no examination made; 4+ four positive.

Our findings are indicated in the accompanying table. By the caption "history and evidence" is meant a combination of conditions such as known exposure, infection of others, pain and burning on urination, profuse leukorrheal and urethral discharge, etc.

An analysis of the table elicits the facts that in only two instances, Cases 6 and 9, was a negative test obtained when there was evidence of gonorrhea, Case 6 having presented a bartholinian abscess that had been cured. However, in these two instances slide examinations and blood complement fixation tests were negative. In seventeen cases with positive clinical evidence and negative slide examinations, our complement fixation reaction was positive. In four cases without clinical appearance of gonorrhea, the test was positive in two and doubtful in two. Five cases doubtful clinically yielded positive reactions. Three cases with positive clinical evidence and positive Smith test exhibited positive blood complement fixation reactions.

CONCLUSIONS

In view of the fact that we have no real basis for comparison of the test under discussion, time and additional work are necessary to establish its value. It is feasible theoretically because it involves the principle of the Bordet-Gengou complement fixation reaction. In our experience it has been of great value in confirmative diagnosis of gonorrheal infections. It has served, finally, as a guide in determining cures.

25 East Washington Street.

Method to Determine Total Amount of Blood in the Body.—The *Correspondenz-Blatt für Schweizer Aerzte* gives brief summaries of some of the German medical journals, and in a recent issue describes M. de Crinis' method of determining the total amount of blood in the body by refractometry. With a Pulfrich refractometer and Reiss' tables he estimates the proportional albumin content of the blood from a specimen of serum after centrifugation. Then the blood is artificially diluted by injection of 500 c.c. of physiologic saline, and after ten minutes another specimen of serum is centrifuged and the percentage content of albumin determined. To avoid error from loss of fluid by skin and kidneys during the interval, he actually injects 550 c.c. of the saline but computes only for the 500 c.c. The total amount of blood thus determined for healthy persons ranged from 3,300 to 5,600 c.c., equivalent to from 5.98 to 7.5 per cent. of the body weight. His research showed further a fairly constant figure for the total blood amount in individual cases for weeks at a time. The original article is credited to the *Zeitschrift für physiologische Chemie*, **99**, 131.

Clinical Notes, Suggestions, and New Instruments

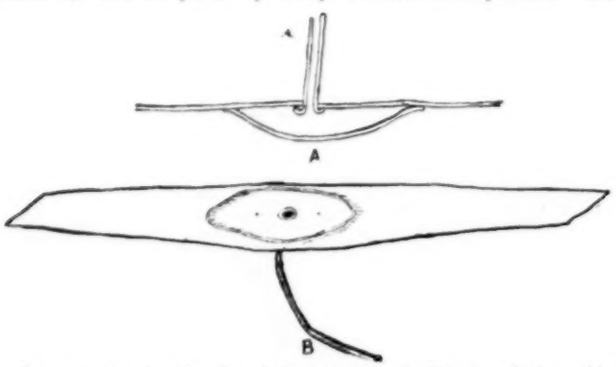
POSTOPERATIVE DRESSING FOR CHOLECYSTOTOMY

Charles H. Breuer, M.D., Lincoln, Neb.

The dressing here described has been adopted in my work in gallbladder cases in which a rubber tube drain is left, for the purpose of eliminating the troublesome and messy pad. These cases, if they drain at all profusely, require changing of the pad from one to three times a day, and usually a large stack of dressings is found saturated with the discharge.

The dressing is made from the rubber umbilical belts made for the umbilical hernia of infants. This belt consists of a band of pure rubber, to extend around the abdomen, with a pneumatic pad in the middle. The pad is inflated by a rubber tube. A section is shown at *A* in the illustration. The rubber pouch which is cemented to the under side of the belt is trimmed away with a pair of scissors, leaving the belt with the tube attached, with the opening on the reverse side of the belt.

After the cholecystotomy case has progressed so far that all drainage can be withdrawn, and only a fistula is left, this belt is sterilized and fastened over the wound, so that the opening into the rubber tube comes just over the fistula. The band is held in place by straps of adhesive plaster. The



Postoperative dressing for cholecystotomy: *A*, diagram of air cushion on umbilical belt; *B*, umbilical belt trimmed for use.

discharge from the fistula is thus enabled to pass through the rubber tube, into a bottle, just as if the rubber drain were still in place.

This effects a great saving in time, trouble and dressings, as well as affording the patient a great deal of convenience over the old method.

THE TREATMENT OF URETHRAL CARUNCLES BY FULGURATION

Edgar G. Ballenger, M.D.
Fellow of the American College of Surgeons
and
Omar F. Elder, M.D., Atlanta, Ga.

Not having seen a report of the employment of the high frequency current in the treatment of urethral caruncles, we desire to direct attention to the value of this method of destroying these troublesome growths. Our first experience with fulguration thus used was about two years ago when we fulgurated a large caruncle which had persistently returned over a period of several years after excision once, destruction by the actual cautery three times, and treatment with various cauterizing chemicals. We, as well as the patient, were much discouraged with the results obtained. We explained that fulguration treatment might succeed in preventing a return of this painful vascular tumor, and the patient readily consented to try this method. The surrounding tissue was infiltrated with a 1 per cent. solution of novocain, and the d'Arsonval current was applied until all of the red growth was whitened. Less pain followed the treatment than had followed any of our previous treatments, and at the end of two years there is no return. Slight bleeding occurred at times as the fulgurated mass separated from the surrounding healthy tissues. There has not developed any narrowing of the urethral canal. Two others have been treated in this manner. One required only a single treatment, as the caruncle was small. The other required two fulgurations, as the growth was massive and so surrounded the urethral canal that we were afraid to attempt a total destruction, as we could not determine the limitations of the growth until it was reduced in size.

The patients have all remained well, though sufficient time has not elapsed to permit us to say they are absolutely cured. We can say, however, that they appear normal, one after two years, one after six months and one after two months. The technic of the procedure is much simpler and easier than excision, and the inconvenience to the patient vastly less, as the fulguration may be performed under local anesthesia.

INDIA INK INFILTRATION: A SIMPLE AND EFFECTIVE SUBSTITUTE FOR CORNEAL TATTOOING*

F. H. Verhoeff, M.D., Boston

The method of tattooing corneal scars hitherto employed has consisted in making numerous needle pricks in the scar and then rubbing into them a paste of India ink. It is necessary to repeat this process many times with sufficiently long intervals to allow the inflammatory reactions to subside. This method has given such unsatisfactory results that corneal tattooing is now seldom attempted, either for cosmetic or for optical purposes. Moreover, it is open to the objection that it exposes the eye to serious danger of infection, and when the iris is caught in the scar, even to the danger of sympathetic uveitis.

Several years ago it occurred to me that a simpler, safe and generally more satisfactory method of darkening corneal scars would be to inject the pigment or coloring matter into the tissue by means of a hypodermic syringe. I therefore tried this method, but instead of making use of India ink, I employed a 20 per cent. solution of argyrol in the hope that permanent argyrosis would be produced. The result was most brilliant for about a week, at the end of which time the superficial layers of the scar were cast off, evidently because of necrosis from the toxic action of the argyrol. This made the scar thinner and much less noticeable, but of course was not the desired solution of the problem. It was noteworthy that the argyrol solution remained in the place it was injected and did not diffuse into the surrounding tissue to the slightest extent, thus proving that the penetrating power claimed for argyrol does not really exist.

Recently I have tried the method again in three cases, using India ink instead of argyrol, and the results have been entirely satisfactory. I made use of an ordinary small glass hypodermic syringe and a medium size needle (26 gage). A very small needle might tend to become plugged by the ink particles. The India ink, in stick form, was rubbed up in a small amount of physiologic sodium chlorid solution until a sufficiently black suspension was obtained. The fluid was then drawn up into the syringe through the needle, a piece of cork placed on the end of the needle, and the whole sterilized by boiling. The eye was then cocainized and held firmly by fixation forceps. After the syringe had been cooled and all air carefully forced out of it, the needle was introduced into the scar near the margin and the point pushed just beyond the center. The fluid was then slowly injected until only a narrow rim of the scar remained unblackened. In two of the cases it was necessary to insert the needle in two or three places to obtain this result, owing to the large sizes of the scars. The reason for not forcing the fluid quite to the margins of the scars was to avoid the possibility of its suddenly breaking its way into the normal corneal tissue. The uninjected margins of the scars, however, in none of the cases were sufficiently conspicuous to interfere with the cosmetic results.

* From the Massachusetts Charitable Eye and Ear Infirmary.

Great care was taken not to force the needle into the anterior chamber.

Following the operation, the eye in each case showed a slight reaction which subsided in about a week. In the course of a few weeks, the blackening became more uniform so that the ultimate results were superior to those immediately obtained. These results were far superior to those of any tattooing operations I have seen, and owing to the large amount of pigment injected and its depth in the tissues, there is every reason to believe that the improvement will be permanent.

DILUTING FLUID FOR COUNTING BLOOD CORPUSCLES

JACOB DINER, M.D., NEW YORK

The need of a good diluting fluid for the purpose of counting blood corpuscles has often been impressed on me while working in the laboratory and in hospitals. Those mentioned in textbooks have many drawbacks. Some form a precipitate on standing; others while remaining clear do not permit of the addition of staining solutions so that the white corpuscles may be differentiated from the red corpuscles while making the count; still others destroy the red corpuscles if the diluted blood is permitted to remain in the counting pipet for some hours.

With the object in view of securing a fluid which will do away with the objections mentioned, I have done some work along this line and have obtained what I believe to be an ideal diluting fluid. This fluid permits of the simultaneous counting of white and red corpuscles; it keeps indefinitely without precipitating; it retains the normal shape of the corpuscles, and the diluted blood kept in the diluting pipet for over a week was as perfect as when first drawn. The formula is as follows:

Sodium chlorid	0.85	gm.
Sodium citrate	2.00	gm.
Azure II	0.001	gm.
Formaldehyd solution, U. S. P.	3	drops

Distilled water enough to make 100 c.c.

The sodium salts are dissolved in the water, the formaldehyd solution is added, the azure is added, and it is shaken well. It may be kept in any kind of a bottle.

The technic of using it is the same as with Toison's, Hayem's, or any other fluid. The findings are computed according to the degree of dilution.

FRACTURE OF ISCHIUM

ALBERT FRANKLIN TYLER, B.Sc., M.D., OMAHA

Fracture of the ischium is so rare that the following case is worthy of attention. The history of the accident as given by the patient is interesting.

W. S., a robust man, said that two days previously he had fallen in such a manner that he landed on the buttocks in the sitting position. A half buried brick protruded from the ground so that the force of the fall drove the brick against the right buttock. He tried to rise to his feet, and as he assumed the standing position there was a loud snap and he fell to the ground a second time. Thereafter he was unable to use the leg, and suffered intense pain when any effort was made to do so.

The man lay on the left side with the right leg flexed at the knee. Any attempt to extend the leg produced pain in the right buttock. Pressure over the region of the tuberosity of the ischium elicited severe pain.

Roentgen examination revealed a fracture through both rami of the ischium, the anterior being at about the junction of the ischium and pubic bone, the posterior extending through the acetabulum.

The patient was kept in bed on the left side with the right leg flexed at the knee. Recovery has been slow, but is good as far as function is concerned.

It would seem that when the patient's buttock struck the brick, only a partial fracture occurred, which was completed by the muscle strain incident to rising to the erect position.

Military Medicine and Surgery

PITCHING AND STRIKING THE UNITED STATES ARMY FIELD HOSPITAL

WILLIAM W. RENO, A.M., M.D.
Lieutenant-Colonel, Medical Corps, U. S. Army
FORT RILEY, KAN.

The ability to pitch or strike its field hospital in a very short time is a necessary accomplishment for every field hospital company. Speed in these two

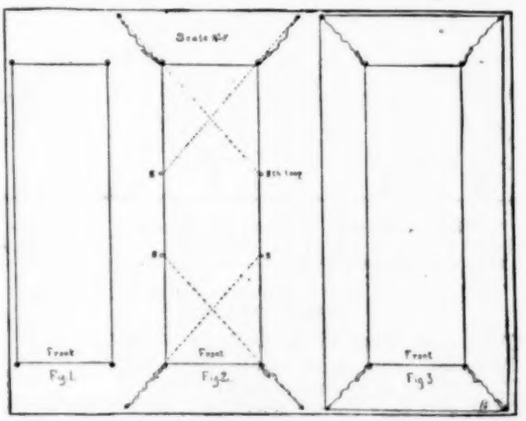


Fig. 1.—Pitching tentage, first step: Tent pinned to the ground by its four corners. Always draw wall taut and then slacken 4 inches before driving the corner pin.

Fig. 2.—Second step: The four corner guy pins added, and ropes placed over them.

Fig. 3.—Third step: Storm guys stretched for alining guy pins.

operations will often spell success in the evacuation of the wounded in time of war. As every civilian physician who joins a field hospital company will be

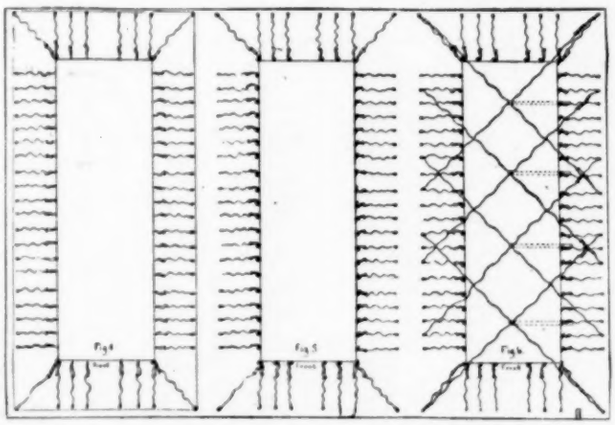


Fig 4.—Pitching tentage, fourth step: Guy pins driven inside of ropes, opposite wall loops, and guy ropes, fully slackened, placed over pins.

Fig. 5.—Fifth step; Wall pins driven through wall loops on Sides 1, 2 and 3, and at (not through) wall loops on Side 4; wall loops removed at LECWP and LRCWP.

Fig. 6.—Sixth step: Uprights placed, hoods and storm guys adjusted; men creep under tent, raise, and then adjust uprights and ropes. Storm guy, a long rope over tent.

confronted with these necessary procedures, their anatomy will be presented in detail. The first essential is to learn how to pitch, strike and fold army tentage.

PITCHING

The field hospital company is divided into tent pitching squads, each of eight men and an NCO. Each

squad is divided into four minor squads of two men each, numbered Minor Squad 1, Minor Squad 2, Minor Squad 3 and Minor Squad 4. The four sides of a tent are numbered 1, 2, 3 and 4, Side 1 being the front side, and the others, 2, 3 and 4, numbered as the hands of a clock travel, that is, No. 2 to the right, No. 3 to the rear and No. 4 to the left. Each minor squad pitches and strikes on the side of its number, as Minor Squad 1 on Side 1, etc.

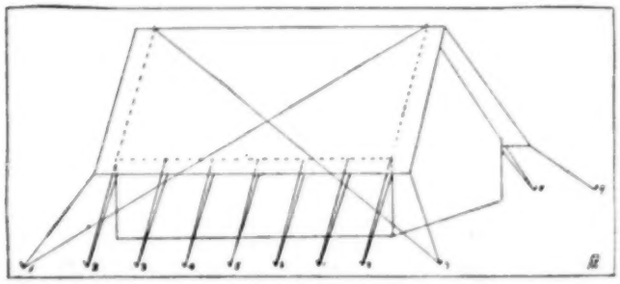


Fig. 7.—View of hospital tent and fly: Ropes go to pins as indicated; 1 and 9 are 8 feet from the corner wall pin; 2 and 8 are 2 feet from 1 and 9; corner guys of tent are on 2 and 8.

ABBREVIATIONS

RFCWP, right front corner wall pin
LFCWP, left front corner wall pin
RRCWP, right rear corner wall pin
LRCWP, left rear corner wall pin
NCO, noncommissioned officer

(*a*) The tents are unrolled. Squad 1 drives RFCWP, places RFCW loop over RFCWP, and ties the front door with a wall pin through the proper wall loop. (The proper wall loop is found as follows: For hospital and wall tents the two wall loops at the ends of the sod-cloth (the canvas apron below the walls) are used, one being slipped through the other and a wall pin being thrust through the free one. For ward

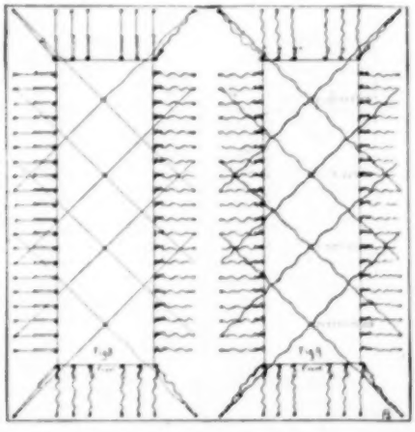


Fig. 8.—Striking Tentage, first step: Loosen guy ropes on Sides 1 and 4. (Do not remove from pins. Loosen on Side 4 only if no guy ropes on Side 1.) Also remove wall loops on Side 4, including corners.

Fig. 9.—Second step: At command "down," men carry bases of uprights through Side 4, then remove all pins except R and LRCWP for pyramidal tents or RF and RRCWP for all other tents.

and pyramidal tents, the wall loop at the end of the sod-cloth is slipped through the loop where a rope is tied to the end of the door, and the wall pin is thrust through the wall loop. The rear door, if there is one, is tied in the same manner.) At once Squad 4 places LFCW loop over LFCWP, and drives the pin after the NCO alines on the other tents. Squad 2 places RRCW loop over RRCWP, and drives the pin. Squad 3 places LRCW loop over LRCWP, and drives the pin. The tent is now pinned to the ground by its four corners (Fig. 1).

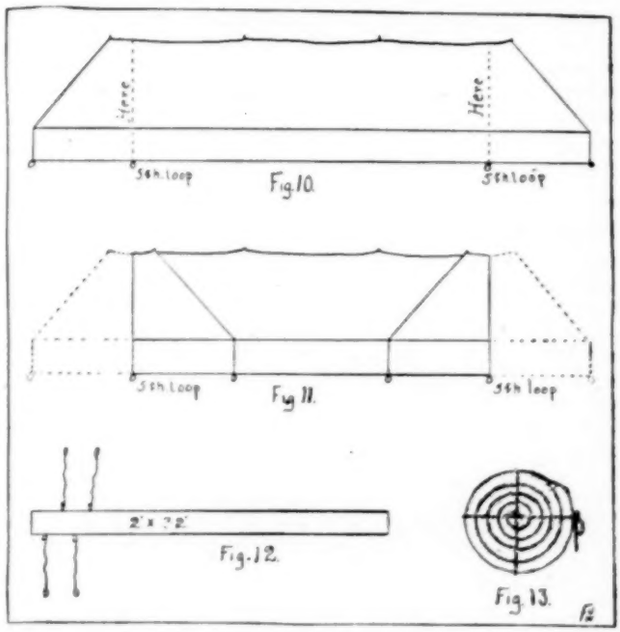


Fig. 10.—Folding, first step: Draw tent away from tent site until taut on two corner pins. Fold ends to lines marked "here."

Fig. 11.—Second step: Place all guy ropes and hoods on tent near apex. Fold from apex in 2 feet folds until in a long, slender rectangle about 2 by 30 feet.

Fig. 12.—Third step: Roll tightly from one end and tie at other with four guy ropes around circumference.

Fig. 13.—Fourth step: Tie this drum shaped package in a manta, if there is one.

(*b*) Each squad now drives its corner guy, using a guy pin, which is exactly 2 feet long, as a measuring stick. The guy pin is driven, for square or approximately square tents, in a line diagonal with the opposite corner. For the ward tent, which is a long tent,

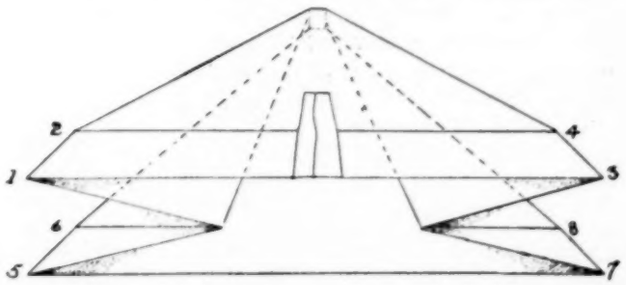


Fig. 14.—Folding pyramidal tent: Draw tent taut on two corner wall pins. Carry 1-2 over to 7-8. Return and cover 5-6, smoothing out folds. Now carry 3-4 to 5-6, return and cover 7-8, smoothing door and any folds. This makes the tent bellows-shaped. All this time the metal square at the apex is held taut and perpendicular on the ground. Now place hood in apex square and fold from top to bottom in apex-square-width folds. Then fold from each end and tie with two interior guys, fully slackened.

the diagonal crosses the tent at the eighth wall pin on the opposite side instead of at the corner (Fig. 2). The distance of the corner guy pin from the corner wall pin is as follows: 6 feet for the small wall tent and the small pyramidal tent; 7 feet for the pyramidal tent; 8 feet for the wall and the hospital tents, and 11 feet for the ward tent.

(*c*) Four wall pins and four guy pins are now in the ground for each tent. At once storm guy ropes

(braces) or hood guy ropes are stretched between the corner guy pins on every side where guy pins are to be inserted (Fig. 3). These mark the line for the guy pin sites. Just inside this rope a guy pin is driven to match every wall loop seen on the tent. All guy ropes, fully slackened, are placed over these pins in proper order (Fig. 4). Now, for the pyramidal tents, all wall

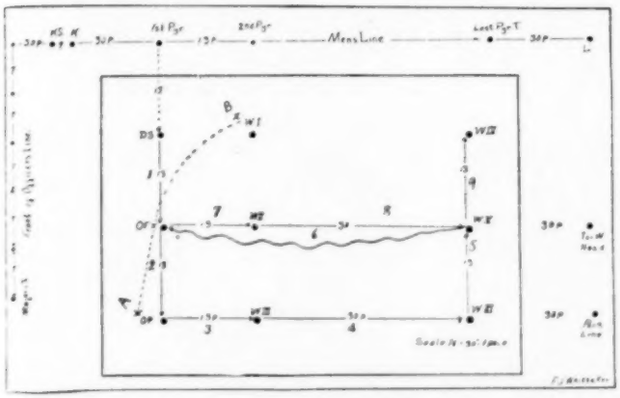


Fig. 15.—Laying out the hospital site: As soon as the officer has traveled over the route 1, 2, 3, 4, 5, 6, 7, 8, 9, the king pin sites for the hospital are located; the numbers 7, 13 and 30 refer to the number of paces; *x*, *x*, *x*, on the line *A-B*, the positions taken by the orderly; the dots, right front corner wall pins.

pins are driven through the wall loops, the bottom tent wall edge being first made perfectly straight. For all other tents on Side 4, wall pins are driven at wall loop site instead of through it, so that uprights can be inserted from Side 4. Also wall loops are removed from LFCWP and LRCWP for the same reason (Fig. 5).

(*d*) Now the upright or uprights, and the ridge, hood and storm guys, if there are any, are inserted (Fig. 6). (The upright for pyramidal tents is inserted from the front door; uprights for all other rectangular tents from Side 4.) For all tents the front upright, hood, apex ring or square is numbered 1; the second, 2; the next 3, and the rear one 4, if there are so many.

(*e*) *Raising the Tent.*—For pyramidal tents: Each No. 1 of the four minor squads goes to his corner guy, and all No. 2's enter the tent and at command "Raise"

Fig. 16.—As soon as the officer has paced and meandered over the route 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, markers for officers', men's and kitchen tentage are in the ground. The numbers 7, 13 and 30 refer to the number of paces between pins; *RFCWP*, right front corner wall pin; *LFCWP*, left front corner wall pin; *O*, right or left front corner wall pin as shown above; *A*, men's and patients' latrines; *B*, wagon or truck park; *C*, picket line.

by the NCO, raise the tripod and the wooden upright. The NCO at the door alines the upright. He directs the proper No. 1 to tighten. When he says "All tighten," all 1's and 2's tighten all guys and hood ropes on their respective sides. For hospital or wall tents: Minor squads 1 and 2 go to the front upright, and No. 1 of Minor Squad 1 places the apex of the upright on his right knee and adjusts the necessary parts. Minor Squads 3 and 4 do the same at the rear upright, No. 1 of Squad 3 assuming a left knee position. At the command "Raise" by the NCO, the tent is raised by the eight men. (Bases of uprights must always remain on the ground in the raising.) The same procedure is followed with the ward tent, except that Minor Squad 1 and No. 1 of Squad 2 raise Upright 1, No. 2 of Minor Squad 2 raises Upright 2, No. 2 of Minor Squad 3 raises Upright 3, and Minor Squad 4 and No. 1 of Minor Squad 3 raise Upright 4.

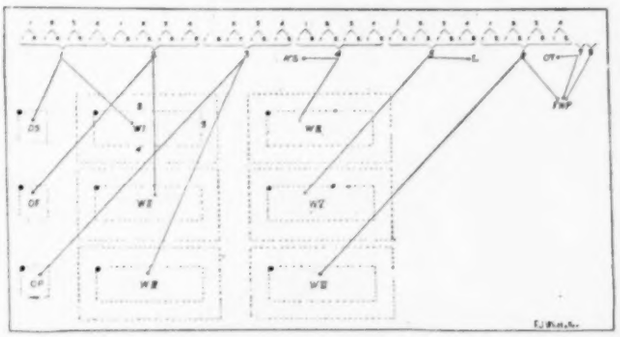


Fig. 17.—With an animal-drawn field hospital, the men form in line in the company street before pitching the field hospital.

(*f*) As soon as the tent is raised, the uprights are alined, all guys and other ropes are tightened, and all axes, extra pins and débris placed at the right front corner of the six ward tents (inside the ropes, axes chopped into ground in line, pins and débris in orderly piles). Figure 7 shows the method of placing tent, fly and storm guy ropes for the hospital tent.

STRIKING

Only four men strike a tent, as each squad usually strikes two tents. Minor Squads 1 and 2 strike their

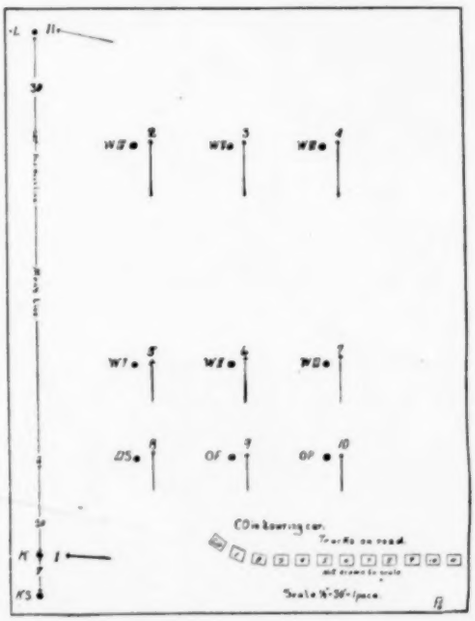


Fig. 18.—Route and stopping point of trucks: Each truck stops at the point on the hospital site where its number is placed. When unloaded, it goes at once to its proper place in the truck park, 7 feet apart. At truck park all drivers "eyes right" on office and Wards 2 and 5 markers for alinement.

tent nearest the front of the hospital; Minor Squads 3 and 4 the tent toward the rear. First step: The guy

ropes only on Sides 1 and 4 are loosened. (They are not taken off of the guy pins.) All wall loops are removed from the wall pins on Side 4 only (Fig. 8). Second step: The men go at once to the uprights (if

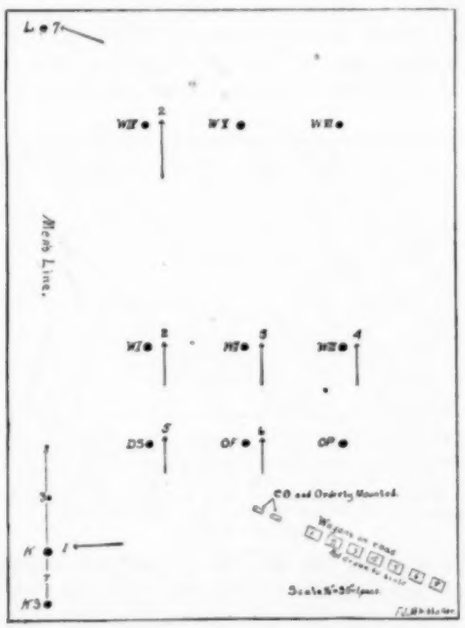


Fig. 19.—Route and stopping point of wagons: Each wagon stops at the point on the hospital site where its number is placed. When unloaded it goes at once to its proper place in the wagon park, 7 feet apart. At wagon park all drivers "eyes right" on office, and Wards 2 and 5 markers for alinement.

there are two uprights, two men per upright; if four, one man per upright, in order of squad number from front to rear) and at the command "Down" by the man at the front upright, the bases of all uprights are removed through Side 4 (for pyramidal tents, through the front door; also wall loops on Side 4 need not be removed; Fig. 9).

pins left in the ground. Pyramidal tents are folded bellows-shaped (Fig. 14), and are folded from the apex the width of the metal square until all folded. Then they are folded from each end and tied with two

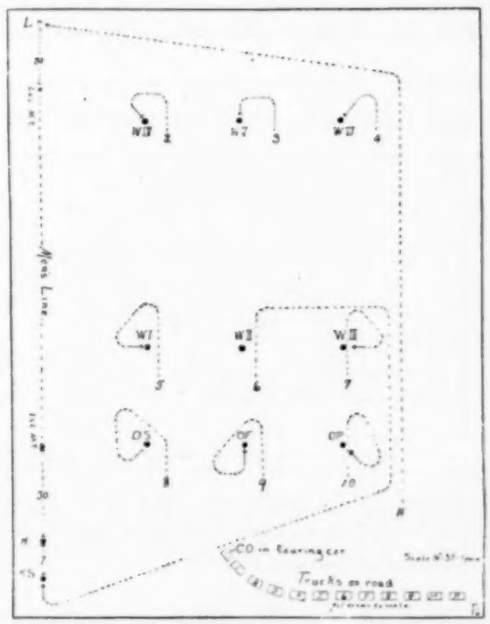


Fig. 20.—Pitching and striking at night. The commanding officer and orderly drive ahead of the column and place lighted lanterns at the marker site. Each truck stops at a lighted lantern as indicated in Figure 18. When unloaded it wheels and points headlights in direction of arrow. This gives a well illuminated field for pitching. These positions are assumed in striking also.

If the hospital is animal drawn the lanterns are placed as indicated, but the wagons stop as shown in Figure 19. The additional lanterns belonging to the field hospital are now lighted and placed wherever needed.

center guy ropes, fully slackened. Hospital or wall tents are folded in end triangles until the tent is rectangular. They are folded from the apex in 2 foot folds until entirely folded. They are folded from each end and tied with two center guys, fully slackened. (If a fly is present, it is folded and the tent placed on it before final folding and tying. This ties both into one package.) With ward tents, the front of the tent, one panel beyond the first apex ring, is folded to the

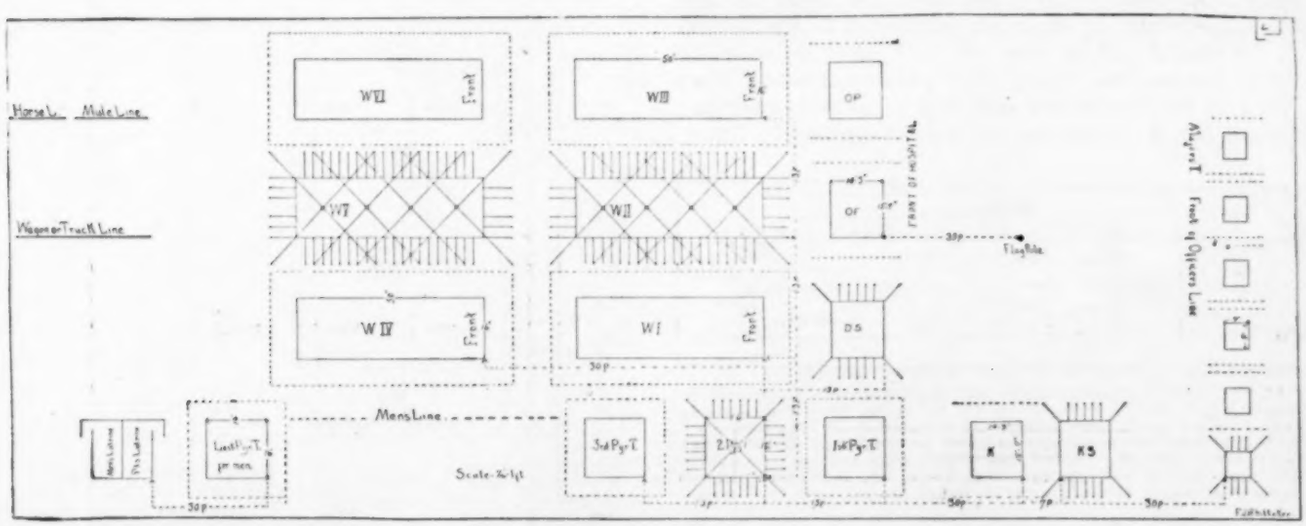


Fig. 21.—Ground plan of a field hospital.

FOLDING

All pins except RFCWP and RRCWP for all tents except pyramidal are removed. For pyramidal tents, all are removed except RRCWP and LRCWP. The tent is pulled away from its site until taut on the two

fifth loop (Fig. 10). The same is done at the rear (Fig. 11). Now eight storm guys and four hoods are added. Now from apex it is folded in 2 foot folds until entirely folded (Fig. 12). Rolling is begun at one end, and four guy ropes are left out, fully slackened, two on each side, at the other end for tying. This gives a drum-shape package easily handled, with only the wall outside (Fig. 13). Now it is tied in a cover or manta, if there is one.

LAYING OUT THE HOSPITAL

As soon as the officer has traveled over the route 1, 2, 3, 4, 5, 6, 7, 8, 9 (Fig. 15), the sites for the store tent, office, operating tent and six ward tents are located. If pyramidal tents for the men are to be pitched, sites are marked as in Figure 16. If shelter tents, when he is ready to leave Ward 4 marker, the officer continues outward for 13 paces and places a marker to orient the rear end of the men's line. This marker is in line with Wards 4, 5 and 6 markers. He then goes to the stores marker, moves outward for 13 paces, and places a marker in line with stores, office and OP tent markers to mark the head of the men's line. At this marker he right angles to the left for 30 paces and places a marker for RFCWP of the

Fig. 22.—An animal-drawn field hospital on the march.

kitchen. This marker is in line with the front and the rear men's markers. At 7 paces farther in the same line, he places a marker for the LFCWP of the kitchen store tent. He then continues in the same line for 30 paces, and places a marker for the LFCWP of the junior officer's tent. He right angles to the left, goes 7 paces, and places a marker for the LFCWP of the next officer's tent, 7 paces more for the LFCWP of the next officer's tent, and so on until a marker for the major's tent is placed.

Route of Orderly (*A-B*, Fig. 15).—The orderly starts at OP tent by assisting the officer in turning a right angle and waving him into position at Ward 3. He then goes to a point in front of the office marker and alines the officer for Ward 2 marker. He then goes to a point near the site for Ward 1 marker and places a marker in the ground alined on Wards 2 and 3. The officer at Ward 4 also alines the orderly's marker on Ward 4 and stores, which locates the site of Ward 1 marker.

Waving into Position.—The waver extends both arms sideward, looking at the "marker or pin setter." "M or PS" moves the marker or the pin to the right or to the left as the right or the left arm of the waver moves up and down. Both arms of the waver quickly lowered means "position is correct."

Provisional Pin. — When the officer first reaches Ward 5 he places a marker slanting directly backward as a "sighting" or provisional marker. Its distance from Ward 6 marker is correct, but its distance from Ward 2 marker is uncertain. The orderly at the office

Fig. 23.—Raising the hospital tentage.

waves the officer into position at Ward 2 by sighting on a slanting marker, and the officer "ties in" this marker (places it in proper position perfectly upright) after pacing "8" (distance between Ward 2 and 5 markers) in the route of the officer.

TO FORM COMPANY ON LINE FOR PITCHING HOSPITAL

The company approaches in column of fours at double time with the leading element facing directly down CF line. The commands "On right into line," and "March" are given as the first set of fours reaches the head of the men's line, and "Company, Halt" as soon as on CF line; "Front," as soon as the company is in proper line 13 paces from hospital site; next, "Count Twos"; then "Count MS by fours" (this means count minor squads 1, 2, 3, 4; 1, 2, 3, 4; 1, 2, 3, 4, and so on, each No. 2 counting). Then the command "Count TP Squads." (Each No. 2 of each fourth minor squad counts numerically as 1, 2, 3, 4, 5, 6, etc.). As soon as this count is completed, the men rush to

Fig. 24.—The hospital complete, ready to accommodate 216 bed patients.

the wagons, unload and pitch the hospital. For the motorized field hospital, proper squads are already on trucks at the proper tent pitching sites. As soon as they have unloaded the trucks they rush to the men's line, unsling packs, return to tent sites, and begin pitching.

ABBREVIATIONS

MS, minor squad
CF, company front
TPS, tent pitching squad
L, latrine
DS, dispensary and stores tent
OF, office tent
OP, operating tent
FHP, field hospital property
MS by fours, minor squads by fours
TP Squads, tent pitching squads

Fig. 25.—Admitting patients to the hospital.

Two cooks and two kitchen police riding on Truck 1 pitch the kitchen fly.

ROUTINE

When an order to pitch hospital is received, an officer with an orderly seeks a suitable site and lays out the hospital as in Figure 15. If this order occurs at night, the procedure is outlined in Figure 20. Later the officers' line is added as in Figure 16. When trucks or wagons arrive, they go to sites as shown in Figures 18 or 19. Tentage is pitched as in the large ground plan.

ABBREVIATIONS

K, kitchen
KS, kitchen stores
OT, officers' tentage
W, ward
OF, office tent
OP, operating tent
FHP, field hospital property
SQ, squad
KP, kitchen police
DS, dispensary and store tent
L, latrine tentage
HT, hospital tent

Fig. 26.—A view of the operating tent.

LOADS OF TRUCKS

Truck 1 carries K. fly; KS; OT; KS tent; cooks and KP.
Truck 2 carries W 4 complete; FHP; Sq. 4.
Truck 3 carries W 5 complete; FHP; Sq. 5.
Truck 4 carries W 6 complete; FHP; Sq. 6.
Truck 5 carries W 1 complete; DS; FHP; Sq. 1.
Truck 6 carries W 2 complete; OF; FHP; Sq. 2.
Truck 7 carries W 3 complete; OP; FHP; Sq. 3.
Truck 8 carries Disp. equip.; FHP; Sq. 7.
Truck 9 carries Office equip.; FHP; Sq. 8.
Truck 10 carries Oper. tent equip.; FHP; any extra men.
Truck 11 carries FHP; L; gas; oil; water; any extra men.

LOADS OF WAGONS

Wagon 1 carries same as Truck 1. (Cooks and KP ride wherever convenient.)
Wagon 2 carries 6 Ward tents (no poles or pins).
Wagon 3 carries 3 HT—all poles, pins, axes.
Wagon 4 carries Bedding.
Wagon 5 carries Bedding, Disp. Office and other FHP.
Wagon 6 carries OP equip. and FHP.
Wagon 7 carries L and forage.

SQUAD DUTY

Each squad always unloads, pitches, strikes and loads tentage and equipment as follows:

Sq. 1 = DS and W 1
Sq. 2 = OF and W 2
Sq. 3 = OP and W 3
Sq. 4 = KS and W 4
Sq. 5 = L and W 5
Sq. 6 = W 6 and places FHP
Sq. 7 = Places FHP and pitches OT
Sq. 8 = Places FHP

Cooks and KP pitch the kitchen fly, put up a stove, dig a garbage pit, and prepare a meal.

All police the camp site before leaving. The hospital should be laid out before the arrival of trucks or wagons in order to avoid delay.

PITCHING AND STRIKING A FIELD HOSPITAL

Time begins when wagons or trucks are 50 feet from the hospital site (the ground plan is given in Figure 21). If the equipment is animal drawn, the men double time to the men's line, remove packs, rush to the proper wagons (Fig. 17), unload, and pitch tents as indicated under "routine." If the equipment is motorized, when the trucks stop at the tent sites the men jump off, unload the trucks, rush to the men's line, remove equipment, rush back to the tentage sites, and pitch the proper tents. Time ends when every detail previously announced by the commanding officer is completed. (At first drills, only tent pitching is done. Later, latrine, wagon or truck park, kitchen, equiping one ward, office, operating tent, picket line, if there is one, are added. Finally, the hospital complete in every detail is required.)

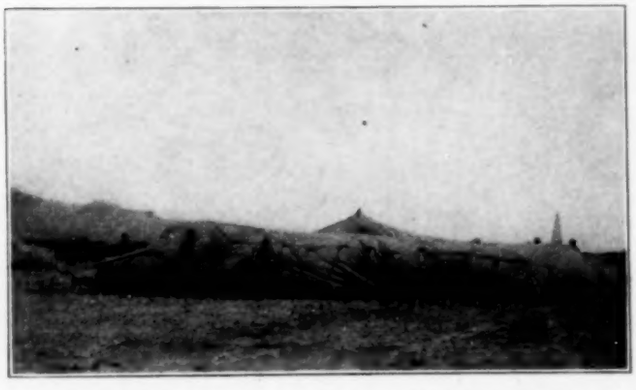


Fig. 27.—Striking the huge ward tent; each field hospital has six of these.

Striking.—Men form in line in the company street. The whistle blows. Time begins. The men rush to work. Time ends when the equipment is properly loaded, and men and vehicles are 50 feet beyond the hospital site. (The site, of course, is to be policed perfectly.)

FOR SPEED IN PITCHING AND STRIKING HOSPITAL

All details should be so arranged that no commands are needed at the hospital site. With a well trained company no voices are heard during pitching or striking. If time is taken, a whistle blast starts and ends each operation.

Although it has taken many words and illustrations to present the details of pitching and striking a field hospital, a trained field hospital company has pitched its field hospital, ready for work, in less than fifteen minutes. Also it has struck the hospital and been en route to some other field of endeavor in six minutes.

MEDICOMILITARY CONSIDERATIONS OF THE MODERN MILITARY BULLET

ROBERT BOOTH ACKER, M.D.
Assistant Surgeon, United States Public Health Service
FORT STANTON, N. M.

The modern military bullet is small of caliber, of comparatively light weight and is propelled at very high velocity by dense smokeless powder. It is sharp pointed and is cylindro-ogival in shape. The bullet consists, in most cases, of a central core of lead with an extremely hard jacket of nickel composition. The French bullet, however, is of solid copper.

From the short, heavy, large-calibered bullet of lead, propelled at low velocity by black powder, the military

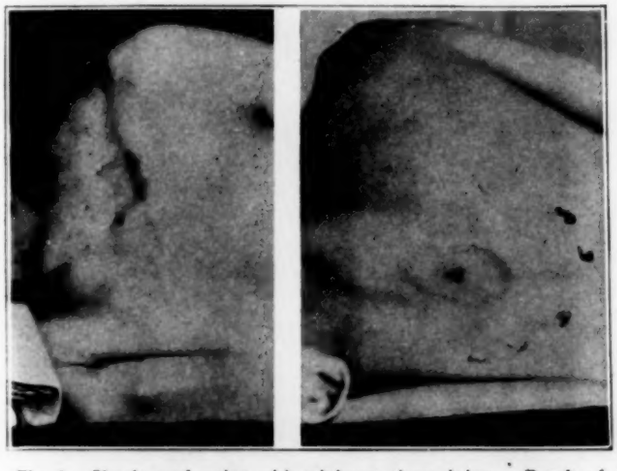


Fig. 1.—Simple perforation with minimum tissue injury. Result of a sniper's bullet at long range.

bullet has changed, through many gradations, to a long, light-weight, small-calibered jacketed bullet, propelled at very high velocity, with flat trajectory, by smokeless powder and with a striking force of tremendous energy.

It was originally believed that a bullet of this type, if it did not strike a vital part, would cause a simple perforating wound which would heal quickly and cleanly. Practical experience has shown that the modern military bullet commonly causes wounds of an extensive and mutilating character, especially at moderate ranges and on striking bone. This destructive action is popularly known as the "explosive effect," and indeed a penetrating bullet in the act of leaving the body may literally tear away the flesh or leave a mushroom-like mass of tissue at its point of exit.

As an instrument of death and as a means of producing wounds of a severe and disabling character, the modern bullet is very effective. It is at long ranges that the simple perforating effect is most often noted.

The German S bullet (*Spitzgeschoss*) weighs 154 grains and is propelled by approximately 50 grains of dense smokeless powder. The jacket is of ferronickel. The lead core is not completely covered by the jacket but is exposed at the base of the bullet. The English bullet is similar in construction, with a jacket of cupronickel and an aluminum cone or so-called "jockey" at the point of the lead core. It is longer and heavier than the S bullet and weighs 174 grains. The French bullet is of solid copper, and is longer and heavier

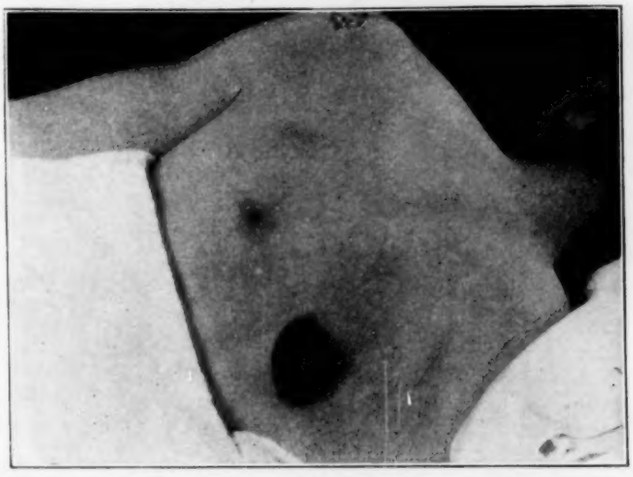


Fig. 2.—Explosive wound of exit in muscles of the back, produced by a bullet at range of less than 500 yards.

than either the German or the English bullet, its weight being 197 grains. The 1906 United States government model Springfield cartridge has a bullet weighing 150 grains, with a lead core and a jacket of cupronickel.

The German cartridge is the most powerful in use among the belligerents at the present time. The bullet leaves the muzzle of the rifle with a velocity of 2,915 feet per second and has at the muzzle a striking energy of 3,018 foot-pounds, or two and one-half times that of the old 45-70 U. S. Springfield cartridge used in late Civil War days. The 1906 Springfield cartridge most nearly approaches this tremendous force, having an initial velocity of 2,700 foot-seconds and a muzzle energy of 2,445 foot-pounds. The velocity, and consequently the striking power of these high power bullets, rapidly falls after traversing the first few hundred

Fig. 3.—Extensive tissue destruction produced by a high energy, penetrating bullet striking the ulna and causing comminution. Range less than 500 yards. A roentgenogram of this wound is shown in Figure 4.

yards, so that at 500 yards the velocity of the German bullet is 1,714 foot-seconds and its striking energy but 1,001 foot-pounds, only one third of its muzzle energy, while the Springfield bullet is traveling at the rate of 1,668 foot-seconds and has only 932 foot-pounds energy. At 1,000 yards the velocity and energy of each is 1,068, 382 and 1,047, 370, respectively.

The velocity and striking force of these two bullets decreases much more rapidly, relatively, than is the

case with the French and English bullets, which have a lower initial velocity but higher sectional density and weight. Thus the English and French bullets, especially the French, are much more effective at

Fig. 4.—Comminution of the ulna in the wound shown in Figure 3.

extreme ranges, for, while they do not start with as much energy, their greater mass assists in its retention. It is obvious, however, that all of these bullets are at the height of their energy and destructiveness before the first 500 yards are passed in their flight.

Fig. 5.—Simple wound of entrance made by a bullet that lodged in the thigh. Range over 500 yards.

The construction of the German bullet, and others of like type, renders it liable to fragmentation on striking hard objects. This fragmentation is of varied form. The jacket is generally stripped off in one piece and curled, although it may be broken into several pieces. The lead core may remain in one battered lump, may be divided into a few large pieces, or may be shattered into fine pellets, or even into a dustlike condition. The stripped jacket may be left behind in the tissues by a perforating bullet. The solid French bullet, while it may be deformed by striking a hard object, rarely if ever undergoes fragmentation. "Explosive bullets," as these are sometimes called, have, in many instances, had their velocity checked and their course altered by striking an intervening object. They ricochet, and the fragmentation begun by the first impact is completed by striking the body. They do not commonly produce the severe laceration of a penetrating, intact bullet at the height of its energy.

A jacketed bullet may, in traversing a barrel heated by repeated firing and aided by the friction of the particular bullet, become heated to the extent that the lead core assumes a semisolid state. Such a bullet when it strikes, flattens out like a well-rotted apple, and the

Fig. 6.—An unusual bullet wound. Sniper's shot at long range. Bullet entered at the bridge of the nose, penetrated the nasal fossa, hard palate and tongue and lodged in the tissues of the neck near the larynx. Patient recovered.

lead is distributed in the tissues in a finely powdered form. A bullet of this nature would have little penetration and its destructiveness would be thereby limited.

It has been repeatedly noted by medical officers that at moderate ranges the military bullet produces extensive and destructive wounds in its course of leaving the body. At longer ranges the bullet is more apt to lodge with less destructive effect, or simply to penetrate with little or none of the "explosive effect" noted at closer range.

In the matter of the bullet itself there are two factors concerned in the production of the maximum mutilation of tissue: the high velocity of the bullet, and its power of penetration. As previously shown, a light-weight bullet, such as the German bullet, must move with great velocity to develop such tremendous energy. Any factor reducing the velocity diminishes the energy. In flight the velocity decreases rapidly,

and the energy much more rapidly, so that at 500 yards the energy is only one third of the muzzle energy; hence, it is only in the first few hundred yards of its flight that penetration with great energy is produced.

Fig. 7.—Comminution of the metacarpal bones with explosive effect of the bullet in the palm of the hand.

It is this penetrating bullet of high energy that produces the maximum destruction of tissue. The large mutilating, explosive wounds are wounds of exit, the entrance wounds being uniformly small. The most extensive wounds of this character are produced when the shaft of a bone is shattered and the fragments are driven out in the bullet's path.

The wound shown in Figures 3 and 4 was produced in just this way. A high velocity bullet entered the arm on the dorsal surface. The ulna was badly comminuted and fragments of the bone were driven out, literally tearing away the flesh.

In general, it may be said that the closer the range the less likely the bullet is to remain in the tissues and the more likely it is to produce the "explosive effect." It is within the first 500 yards that the "explosive effect" is most often produced.

A bullet on leaving the rifle barrel has two motions: forward motion in the line of flight, and a twisting motion on its longitudinal axis, imparted to it by the rifling of the bore. It is traveling at its maximum velocity and with least air resistance when only these motions are retained. In its flight it may acquire a third motion, a revolving or tumbling on its transverse axis, which, if it comes to pass, markedly slows the bullet and lessens its striking energy.

The turning of a bullet base foremost in the cartridge case reduces the accuracy of its fire, and, as it would travel with greatly diminished velocity, it is much less dangerous and much less destructive to tissue than a bullet in the proper position. The popular belief in the "dum-dum" action of a bullet of this nature is a fallacy.

SUMMARY

The modern military bullet is a projectile, composed in most cases of a lead core with a nickel jacket. It is of low weight, increased length, small caliber and is propelled at very high velocity by dense smokeless powder. It has a flat trajectory and develops tremendous striking energy.

The velocity, and consequently the energy, of this projectile decreases rapidly after the first few hundred yards of its flight.

It is at its highest energy before passing the 500 yard mark; hence, destructive and mutilating wounds are most commonly produced inside this range.

COMPARATIVE BALLISTICS OF MILITARY CARTRIDGES IN USE BY THE BELLIGERENTS IN THE PRESENT WAR

Country	Name of Arm	Caliber (Inches)	Weight of Bullet (grains)	Jacket of Bullet	Core of Bullet	Muzzle Velocity, Feet per Second	Muzzle Energy, Foot-Pounds
France	Lebel	.315	197	None	Solid copper bullet	2,296	2,305
England	Lee-Enfield (mark VII cartridge)	.303	174	Cupro-nickel	Lead	2,450	2,320
Germany	Mauser	.311	154	Ferro-nickel	Lead	2,915	3,018
Russia	Nagant, 3 line	.30	214	Ferro-nickel	Lead	1,985	1,862
Austria, Bulgaria and Greece	Mannlicher	.315	244	Ferro-nickel	Lead	2,034	2,240
Belgium	Mauser	.301	219	Ferro-nickel	Lead	2,034	2,010
United States	Springfield, Model 1906	.30	150	Cupro-nickel	Lead	2,700	2,445
Italy	Paravicini-Carcano	.256	163	Ferro-nickel	Lead	2,295	1,891
Roumania	Mannlicher	.256	162	Ferro-nickel	Lead	2,400	2,070
Turkey	Mauser	.301	211.3	Ferro-nickel	Lead	2,066	2,003

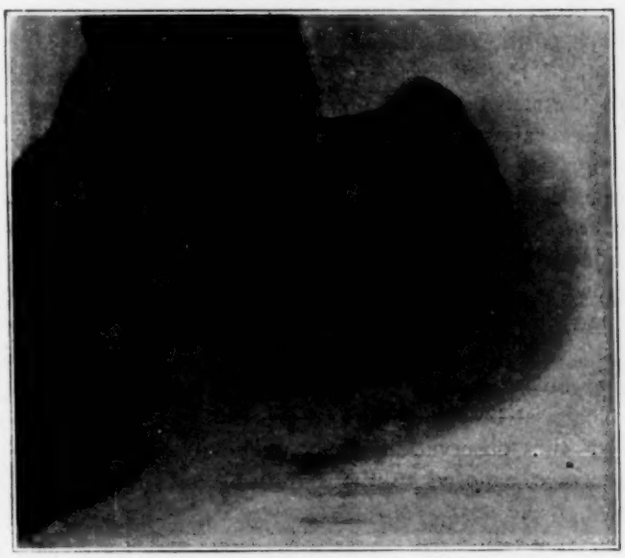


Fig. 8.—Penetration of the os calcis by a high energy bullet at close range but with little comminution or tissue destruction.

These destructive or explosive wounds are wounds produced at the exit of a bullet of very high energy.

At longer ranges the tissue destruction is much less, and a simple perforation may result.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, OCTOBER 27, 1917

ACCLIMATIZATION TO THE TROPICAL SUN

Although our knowledge of the regulation of body temperature and its relation to metabolism has reached a stage at which an intelligent appreciation of many of the factors involved can be formulated, there are features of the heat-controlling mechanism that still demand elucidation. In several respects the climatic conditions that prevail in the tropics have furnished greater obstacles to the comfort of man than have the severe rigors of arctic surroundings. The problems of climatology in the tropics have become emphasized by the growing necessity of the white man's residing there and adjusting himself to the situations created by wind and weather. By some writers, tropical sunlight has been endowed with properties peculiarly detrimental to human health and comfort. The effect of the ultraviolet rays on the skin in the familiar production of the inflammation called sunburn, erythema solare, is not directly associated with heat. Indeed, it is often said to be more likely to occur in colder surroundings, owing, in part perhaps, to the fact that the heat of the sun's rays is not noticed, so that means are not taken to protect the skin to the same extent from their action.

Several years ago Aron, then professor of physiology in the College of Medicine and Surgery at Manila, reported an almost surprising series of observations on the susceptibility of the monkey, a tropical animal, to harm from direct exposure to the sun in the Philippines. Animals were reported to die in many cases in from seventy to eighty minutes when placed on the ground in the Manila sun, even in the coolest months of the year.[1] Shaklee,[2] pharmacologist at the University of the Philippines, has verified the observation that unclimatized Philippine monkeys exposed to the sun in Manila may die of heat stroke in the course of a very short time, depending on conditions.

Factors that must be taken into account in any attempt to determine the cause of a rise in body temperature or of death following exposure to the sun are the energy of the solar rays, and the temperature, the movement and the humidity of the air. Shaklee finds by direct observations that the conditions making for a rapid death are a hot sun; proximity of a large hot surface, such as the ground or a roof; high relative humidity of the atmosphere, and a low wind velocity. Under such circumstances death is due to an accumulation of heat in the body.

The novelty in Shaklee's studies is the finding that monkeys can apparently be acclimatized to the conditions mentioned, if exposure to them is gradual. This is of signal importance in relation to the comparable possibilities in the case of man; for the human organism seems in many ways far better adapted than the monkey's to resist the tropical climate. Shaklee points out that the temperature-regulating mechanism in man is much more sensitive than that in the monkey, as shown by the smallness of the normal variation of the body temperature in man as compared with that in the monkey. The sweating mechanism in man has many times the capacity of that in the monkey, and as the temperature of the surrounding atmosphere approaches the temperature of the body, this becomes the most important means of eliminating heat from the body. The internal heat production of man on a light diet is smaller in proportion to body surface than that of the monkeys subjected to this experiment. Man stands higher above the hot surface on which he rests or moves; hence he would receive less heat from the ground and be subjected to a more rapid movement of air over the body surface than would the monkey. Man's body has much less hair than the monkey's; hence the escape of heat from his body by radiation, conduction or evaporation is less interfered with. Man can so select and arrange his clothing that it will interfere little with the escape of heat from his body, while at the same time it will shield the body from the heat rays coming from the sun. Moreover, man is acquainted with a larger variety of foods.

The acclimatization to the tropical climate as experimentally accomplished in the case of the monkey appears to be due essentially to an increase in the sensitiveness of the nervous mechanism that regulates body temperature. This results in an increase in the rate or efficiency of sweating, producing what has perhaps falsely been termed an immunity. The "immunity" is readily lost if the subjects are kept in the shade. In harmony with the explanation advanced above is the fact that a small dose of atropin, which diminishes the action of the sweat glands, as well as other secretory structures, suffices to nullify the effect of any acclimatization and to cause the death of an acclimatized animal by stopping perspiration. The inference is further supported by the fact that when the relative humidity of the atmosphere is great, even acclimatized animals exhibit a tendency to a markedly greater rise in body temperature. Finally, attempts

1. Aron, H.: Philippine Jour. Sc., (B), 1911, **6**, 110, 130.
2. Shaklee, A. O.: Experimental Acclimatization to the Tropical Sun, Philippine Jour. Sc., (B), 1917, **12**, 1.

to acclimatize rabbits—a species not known to perspire—have thus far entirely failed.

Evidence has begun to accumulate that healthy white men may be readily acclimatized to the tropical climate at its worst. Shaklee maintains that the amount of sweating necessary to keep the body temperature of a healthy white man from rising above normal is not excessive, even when the man is doing considerable physical work in the midday sun in such a tropical climate as that of Manila, provided the man has been sufficiently long on a suitable diet and introduces himself gradually into the work in the sun. In the acclimatization of the white man the most important factor is the proper regulation of the diet. The effects from the tropical sun seem to be exactly the same as the effects from the sun in the United States; that is, no effects were seen or felt in these experiments that were different from what would have been expected under like circumstances in the northern portion of the United States.

THE STRENGTH OF DIABETICS

Although a person in the diabetic condition may be excreting valuable sources of energy, in the form of sugar and ketone substances derived from incompletely burned nutrients, there is no decrease in the quantities of energy transformed in contrast with a comparably healthy individual. There is merely an alteration in the source of the energy; for when carbohydrates can no longer be satisfactorily metabolized, other foodstuffs must be drawn on to supply the body's inevitable needs. Few diabetics can tolerate as much food as their former needs indicate to be essential. The modern starvation treatment of diabetes in the form advised by Allen, which introduces a rigorous regimen of fasting until the diabetic patient becomes free from urinary glucose and from acidosis, meets the energy problem in a direct way. The resulting emaciation apparently decreases the amount of active tissue substance. Calorimetric observations have shown that if a person whose metabolism is normal has been reduced in weight by 30 per cent., his metabolism when he is fed on a low dietary may also be reduced far below his normal level measured by his original weight or body surface. In other words, a smaller body can suffice with a small total intake of food. Emaciation may reduce the body to a size at which it can develop tolerance for the smaller requisite food quota.

Since in ultimate analysis the energy for muscular work comes from energy in the form of ingested food, the question has repeatedly arisen, What effect does the persistent use of a low diet have on the physical vigor of the diabetic? Muscular weakness is characteristic of the diabetic. What bearing has underfeeding on this feature in the case of patients obliged to subsist on a small allowance of food? The answer to this inquiry has been sought by Williams,[1] in a study of the influence of low diets, or the Allen method of treatment, on the physical vigor of diabetics. Strength tests were made by the use of the Collin dynamometer. It appears from the results, and in accord with common clinical observation, that diabetics, as a rule, are distinctly physically weaker than normal persons. Loss of body musculature may partly explain this, but it is probable that the lessened amount of food metabolized in these patients does not provide sufficient energy for the normal exercise requirements of the body. There appears to be a direct relationship between food tolerance and muscular vigor. As food tolerance increases, so does also muscular tone. Decline in food tolerance is accompanied by loss of physical vigor.

Williams further maintains that the continued use of a low diet for many months, even though it falls far short of the energy requirements of the body, provided it is within the physiologic limitations of the body to metabolize it, will cause an appreciable gain in muscular tone, although the amount of physical effort that such a person may be able to put forth may be considerably below the normal. This is in accord with clinical experience that nutrition within the tolerance of the patient gives the greatest comfort, strength and sense of well-being and, as Joslin has pointed out, the greatest expectation of life.

It is not long since the practice was common to urge the feeding of diabetics as freely as possible, in the hope of averting a loss of strength by promoting the greatest possible gain in weight. The new observations of Williams indicate that while diabetics living on a diet below normal physiologic requirements possess a diminished muscular vigor, feeding them beyond their metabolic limitations causes not only a further reduction in their tolerance for food, but also an even greater loss of strength. Thus the hope of improving a bad situation in such cases by overfeeding may well be abandoned.

THE ACTIVE PRINCIPLE OF THE HYPOPHYSIS

The physician who is not extremely well versed in the modern biochemistry of animal tissues might easily draw the conclusion from clinical literature, particularly of the advertising sort, that the "active principles" of various glands and secretions are definitely known and readily isolated. The fortunate circumstances of the separation and complete identification of such a substance in the case of the epinephrin of the suprarenals has given the impetus for further attempts of the same sort. Names have not been lacking for the anticipated "principles"; and occasionally a proposed designation has crept into print in advance of any bona

1. Williams, J. R.: The Effect of Undernutrition on Muscular Force: A Study of the Influence of Low Diets, or the Allen Method of Treatment on the Physical Vigor of Diabetics, Arch. Int. Med., September, 1917, p. 399.

fide production of a truly corresponding active substance. It need not be denied that extracts and other preparations of glands have been prepared in a state of pronounced physiologic potency and corresponding therapeutic value. But this is something as remote from the production of a chemically defined compound of recognized composition as is the isolation of the crystalline alkaloid morphin from gum opium.

Attention has been called by Abel and Pincoffs[1] to misleading claims or beliefs of the sort just indicated, in relation to preparations of "active principles" of the pituitary gland. Thus one widely heralded product claimed by its sponsor to be a "solution of the isolated active substances of the pituitary gland," far from being a mixture of crystalline compounds of high physiologic activity which would justify a designation indicative of chemical unity, is shown to be at best a mixture of proteoses (and possibly peptones) with varying and unknown amounts of active and inactive constituents of the glands.

A study of various commercial pituitary preparations in the laboratory of the Baltimore investigators showed that secondary proteoses and possibly peptones (or polypeptids, if the term is preferred) were present in all of the therapeutically used extracts of the posterior lobe of the hypophysis cerebri that were examined. To what extent the proteose content of the gland may have been increased by autolysis or by processes incidental to the manufacture of the extracts it is impossible to state. It is believed, nevertheless, that the perfectly fresh, bloodless glands yield proteoses, since Abel and Pincoffs have actually isolated such substances from the thyroid gland and other organs when taken from the animal immediately after it has been bled to death.

It would be unfair to assert that every producer of pituitary commercial extracts claims to offer a product free from protein and containing absolutely nothing but potent gland constituents. As a matter of fact, however, those examined do contain adventitious substances. In answer to the inquiry naturally provoked by these findings, Abel and Pincoffs have found that the proteoses isolated from pituitary extracts are practically devoid of oxytocic or uterine contracting action. These protein substances do not constitute the "motiline"[2] that effects the well known activity of suitable pituitary extracts as uterine stimulants.

According to Abel and Pincoffs, and contrary to current teaching, proteoses are present in more than one tissue of the body. Proofs of their existence in gastric and intestinal extracts also has been obtained. The isolation of the hormones found in various active tissues will require a preliminary removal of the proteoses —a task of considerable technical difficulty. Abel and Pincoffs have been able to prepare an extract of the gastric and intestinal mucosa which has a pressor action for the circulation and a marked oxytocic power in a concentration of 1:1,000,000. This powerful action points strongly to the conclusion that here also, as in the case of pituitary extracts, we are dealing with a motiline which, in a state of chemical purity, would be fully as active as beta-imidoazolylethylamin. And this again leads to the supposition that the oxytocic principle (or motiline) of the hypophysis is not a hormone or substance specific to this organ, but is rather a widely distributed substance, everywhere the same, which may have its origin in the various tissues, in the gastric or intestinal mucosa, or which may be absorbed as such from among the products of digestion. In any event, we may well agree with the Johns Hopkins pharmacologists that the active principles of the hypophysis cerebri have not yet been isolated as chemical individuals.

1. Abel, J. J., and Pincoffs, M. C.: On the Presence of Albumoses in Extracts of the Posterior Lobe of the Hypophysis Cerebri, Proc. Nat. Acad. Sc., 1917, 3, 507.

2. This word has been coined in evident analogy with "secretine," the hormone which promotes flow of secretions, to indicate a contraction-producing hormone.

FRUIT ACIDS

Although fruits are held by some persons to be a luxury rather than a dietary necessity, they have recently come into a greater popularity than ever before in the ration of man. The typical American breakfast provides for fruits of some sort as a part of the menu. They enter likewise into the larger meals of the day, and thus secure prominence whether it be because they are regarded as stimulating to the appetite, as endowed with laxative properties, as sources of actual nutriment, or merely as adding a pleasing variety to the diet regardless of any unique dietary virtues. Almost all fruits contain sugar. Experts in nutrition at the present time are inclined to assert that fresh fruits and vegetables, although watery, are convenient sources of many of the substances which are needed by the body in small amounts. Quoting a government publication,[1] it is, in fact, generally believed that, unless these foods are used to some extent, the diet will be lacking in mineral materials and in other important growth and health promoting substances. They are, however, not important sources of fuel. They contain little protein and no fat. The evidence of the extent to which fruits are used lies in the fact that the crop is valued at considerably over 200 million dollars, of which the major share belongs to the orchard fruits. Nearly 200 million bushels of apples alone are produced in the United States each year.

All of the fruits contain noticeable amounts of organic acids, varying with the species involved. As a general rule the acidity tends to decrease with the progress of the ripening. The nature of the acids present has hitherto been anything but accurately determined. In a general way it has been the custom in some quar-

1. Hunt, Caroline L.: Fresh Fruits and Vegetables as Conservers of Other Staple Foods, U. S. Dept. Agr., Farmers' Bull. 871, July, 1917.

ters to distinguish between highly acid and "subacid" varieties—distinctions of a quantitative rather than a qualitative character. The acidity of fruits is said to be largely due, not to free acids, but to acid salts, of which the acid potassium tartrate (cream of tartar) of grapes may serve as an example.[2] However, more than an incidental interest attaches to these questions. Not only may different acids have unlike rôles in promoting some of the effects, such as laxative action, now vaguely assigned to fruits; but there is reason to believe that some of the fruit acids, such as tartaric and benzoic, are oxidized with difficulty if at all in the body. The more readily burned fruit acids act to promote potential alkalinity; for when the organic radicals are oxidized to carbon dioxid and water, so much of any base as was combined with the organic acid remains as a carbonate. Thus, contrary to the popular belief, in metabolism most of the acid fruits actually function as base-forming foods. In accord with this the use of fruits tends to diminish the acidity of the urine, except in those cases in which, owing to incomplete oxidation of the fruit-acid in the system, the potential alkalinity is not fully realized. Blatherwick[3] found, for example, that such foods as oranges, raisins, apples and bananas are very efficient in reducing the acid output. A further importance of the fruit acids is associated with the part they play in jelly making.

The Bureau of Chemistry of the United States Department of Agriculture has undertaken a critical investigation of the acid content of fruits. The chemists, Bigelow and Dunbar,[4] state that the burden of evidence in the literature indicates that tartaric acid is not an ingredient of fruit juices except, of course, grape juice. Citric and malic acids are the characteristic acids found. Succinic acid may occur in small quantities, especially in unripe products. Salicylic, benzoic and formic acids have been reported now and then to occur in traces, the presence of benzoic acid in cranberries and plums being more conspicuous. The acids of some of the fruits like the apricot have not been positively identified. The behavior of citric, malic and tartaric acids in metabolism has recently been discussed in some detail in THE JOURNAL.[5] The tentative conclusions reached by the government bureau indicate the following results:

Fruit	Acids found
Apple	Malic only.
Banana	Probably malic only.
Cantaloupe	Malic none—probaby all citric.
Cherry	Malic only.
Cranberry	Citric probably predominates—malic also present.
Currant	Citric probably predominates—malic sometimes present.
Gooseberry	Malic and citric.
Peach	Probably malic only.
Pear	Malic only in some varieties; citric probably predominates in others with small amounts of malic.
Persimmon	Probably malic only.
Plum	Malic only.
Pomegranate	Probably all citric—no malic or tartaric.
Quince	Malic only—no citric.
Raspberry (red)	Probably citric only—malic, if present, in traces only.
Watermelon	Malic, no citric.

Bigelow and Dunbar say that these generalizations are not offered as final statements. It is possible that later work may modify them in some particulars. Undoubtedly traces of acids other than those here considered occur in many fruits, and it is possible that these may sometimes be found in important quantities. They add that the results obtained with pears emphasize the danger of drawing general conclusions as to the acid content of fruits from the analysis of a limited number of varieties or even of a limited number of samples. It is believed, however, that the general conclusions drawn from those cases in which a considerable number of samples were examined are correct.

2. Sherman, H. C.: Food Products, New York, 1914, p. 352.
3. Blatherwick, N. R.: Specific Rôle of Foods in Relation to Composition of the Urine, Arch. Int. Med., September, 1914, p. 409.
4. Bigelow, W. D., and Dunbar, P. B.: The Acid Content of Fruits, Jour. Industrial and Engineering Chem., 1917, **9**, 762.
5. The Behavior of Malic Acid in the Body, editorial, THE JOURNAL A. M. A., July 7, 1917, p. 44; The Behavior of Three Organic Acids in the Body, March 31, 1917, p. 984.

THE TOXICITY OF ULTRAVIOLET LIGHT

Ultraviolet light can give rise to a large number of photochemical reactions. It is not surprising, therefore, to find that it is active also on protoplasmic systems. It has long been known that various small animals such as are found in fresh water flee from places illuminated by ultraviolet light. Under suitable conditions it has a lethal effect on micro-organisms; hence the plan of using ultraviolet radiation for the sterilization of water. To the physician the effect of this form of light waves is familiar through its manifestations on the skin. It is responsible for the inflammation called sunburn (erythema solare). The care taken to protect workmen in electric welding by having them wear spectacles impermeable to light of short wave lengths, and frequently to protect parts of the skin that are exposed, is due to the fact that the arc spectrum of iron is very rich in ultraviolet lines. Ultraviolet light has furthermore already found employment in therapy. It is a remarkable fact that the excitability to ultraviolet rays is independent of temperature—a fact which substantiates the view that they promote their effects by a photochemical reaction, the products of which may excite suitable receptive organs or structures in the skin or elsewhere.[1]

The greater number of the constituents of living cells do not absorb rays of the wave length of visible light. Many of them, however, absorb ultraviolet light so that, as Bayliss remarks, it is not surprising to find that radiations of this kind have a very powerful effect on living cells as a rule. In a study of the

1. An interesting account of the behavior of ultraviolet light is found in W. M. Bayliss' Principles of General Physiology, London, 1915, p. 569, from which some of the facts given are cited.

possible origin of the toxicity of ultraviolet light, Harris and Hoyt[2] of the University of California point to the general law of photochemical action that only those rays are effective which are absorbed by the system in which the reaction occurs. Visible light rays are not, as a general rule, selectively absorbed by protoplasm, and hence their action is usually confined to specialized pigmented areas which constitute the receptive elements of optical sense organs. Ultraviolet light, on the contrary, is generally highly toxic, even for colorless organisms. Since this toxicity presumably depends on photochemical reactions and is attributable to them, the question presented itself to the California investigators as to the constituent of the protoplasm to which we are to attribute the selective absorption of these rays which is the necessary precedent of their photochemical activity. Various considerations that need not be rehearsed here point to the proteins as the participants in this phenomenon. Kober[3] has confirmed the existence of an absorption band in the ultraviolet in solutions of the amino-acid tyrosin derived from proteins, and also finds that a similar band is exhibited by solutions of phenylalanin. The other amino-acid constituents of the protein molecule exhibit only general (that is nonselective) absorption in the ultraviolet spectrum.

The possibility is thus indicated, Harris and Hoyt further remark, that the tyrosin and phenylalanin radicals of the proteins constitute the optical sensitizers which render living cells susceptible to the toxic action of ultraviolet light. If this should prove to be the case, then, they say, passage of the light through solutions of proteins or the aromatic amino-acids should, by absorption of the toxic rays, to a greater or less extent deprive the light of its toxicity for protoplasm. An experimental study of the rate at which lower living organisms on exposure to ultraviolet rays are exterminated when living in water, in contrast with a medium containing various organic substances, showed a surprising protective action on the part of some of these. The results obtained by the California investigators are, as they express it, decidedly in harmony with the view that the susceptibility of protoplasm to ultraviolet light is conditioned by the selective absorption of the toxic rays by the aromatic amino-acid radicals of the proteins.

2. Harris, F. L., and Hoyt, H. S.: The Possible Origin of the Toxicity of Ultra-Violet Light, Science, 1917, **46**, 318.
3. Kober, P. A.: Spectrographic Study of Amino-Acids and Polypeptides, Jour. Biol. Chem, 1915, **22**, 433.

Specialization in Military Hospitals.—According to the *Nederlandsch Tijdschrift*, Strauss of Berlin has been appealing to the authorities to distribute the sick and wounded in the hospitals by special groups, as this would materially facilitate the service. All with stomach affections and chronic dysentery, requiring a special diet, should be collected in one hospital. Men with trench nephritis should be separated into two groups, the mild and the severe cases. The idea is already realized to a certain extent in many quarters, but he insists that it should be carried much farther as a great aid to efficiency.

Current Comment

WAR SESSION OF THE CLINICAL CONGRESS

The Clinical Congress of Surgeons of North America, in its eighth annual session at Chicago, was a war session. The clinics of each day, held in the various hospitals, were in large part devoted to demonstrations of war methods, of the new antiseptics, of the new treatment for war burns, and of the handling of cases of shock. But the outstanding features were the afternoon and evening sessions. These brought home to the auditors the imminence of America's active participation in the war. Many of the audience were in uniform—on active duty—and on the speakers' rostrum at each session sat representatives of the medical departments of our Allies, France and Britain, and the Surgeons-General of our own governmental departments. At the opening session, Monday evening, the medical profession responded with repeated outbursts of the greatest enthusiasm to the patriotic utterances of the noted speakers. Even the most doubtful skeptic would have been convinced at that session that the American medical profession is in the war wholeheartedly, and resolved to do its "best" rather than merely its "bit." The greatest outburst of all occurred with the announcement that 18,000 physicians have offered their services, without conscription, to the government, and that special conscription of the medical profession would not be needed. Meetings of this character give to those who attend a perspective as to the stand which the medical profession is taking on problems of the day; at this time, particularly, they give a stimulus to all as to the need of complete and hearty cooperation with the government in the ordeal which it faces; above all, they stimulate in each individual a spirit of self-sacrifice and willingness to "do his bit." This is the greatest service which organizations may render to their members and to the public, and that this is recognized is evident from the statement of Surgeon-General Gorgas that organized medicine has given more aid than any other civilian agency to America's successful activities thus far in the war.

THE CHEMICAL STRUCTURE OF NUCLEIC ACID

The bustle of a busy world, particularly in war time, is likely to leave us oblivious to the beauty or the importance of happenings which do not show on the surface their direct application to everyday affairs. Yet even a brief consideration of the fundamentals of such modern necessities as the dynamo, the wireless, the coal tar dyes or the antiseptics, will carry us back to the little heralded research of some quiet investigator in a modest laboratory. In a spirit of dutiful recognition of important contributions of this sort we cannot refrain from reference to a series of investigations on the chemical structure of the nucleic acids, culminating in recent papers from the laboratory of physiologic chemistry at the Johns Hopkins University.[1] To the biologist the nucleic acids are familiar as integral com-

1. These have been published by Walter Jones and his collaborators in the Journal of Biological Chemistry, 1915 to 1917.

ponents of every nucleated cell in living beings; to the physician they further recall the purins, which play a part in the genesis of uric acid. Recent studies have definitely indicated that there are two distinct types of nucleic acids, one of which is found in animal tissues and the other in plants. Our knowledge of plant nucleic acids has been acquired from the study of products from two sources; the wheat embryo and yeast. It has now been ascertained that these plant nucleic acids are probably identical.[2] They are composed of the groups of four mononucleotids (compounds of a nitrogenous substance [either a purin or a pyrimidin], a carbohydrate and phosphoric acid) joined together through their carbohydrate groups. The details of such chemical structure would probably interest most of our readers as little as the intricacies of modern experimentation in the science of immunology on which much useful serum therapy has been based. No one will gainsay, however, that the unraveling of the structure of a compound represented by the empiric formula $C_{38}H_{55}N_{15}O_{29}P_4$ is no mean accomplishment. And to associate this splendid labor largely with the names of American investigators — Osborne, Wheeler, Johnson, Levene, Jacobs, Jones and others — lends a national pride to the accomplishment.

UNWISE ECONOMIES IN DIET

The desire to cooperate with the national Food Administration in its efforts at conservation, and above all the attempt to meet the high cost of living, are leading thoughtful persons throughout the country to scrutinize every phase of the food question. Women, says Miss MacKinnon[3] in "A Lesson in Buying," have fought shy of the phrase "food values," and have preferred to "buy food"; but in these strenuous days the very best service many a woman can render is determined by her ability or inability to manage her food supply. Personal and national necessity is laid on many a woman to make of herself a wise buyer. In many respects—perhaps it should rather be stated, fundamentally—the food problem is one of supplying digestible stores of energy. There is some danger, however, that the calorie may sometimes assume an unwise domination in the selection of human food supplies. It is admitted that conservation should never mean undernourishment or malnutrition; but to avert possibility of these more remote dangers, wise buying of food must sometimes look beyond the energy measure in the selection of the dietary. We are impelled to this remark by reading the advertisement of a cereal food in a current journal addressed essentially to medical readers. The admonition is given to "Eat food that will give you the most energy for the least money." We may accept this advice and likewise admit the statement that "calories measure food energy the same as dollars measure money." But when it is further added that 35 cents' worth of the advertised product will furnish 3,000 calories, a day's need, the implication of the sufficiency of this exclusive product as the sole constituent of the ration must be seriously questioned. It may be true, as the advertisement proudly proclaims, that more calories can be purchased in the form of the vaunted products for 10 cents than is the case in buying sirloin steak, lobsters, bananas or even milk. Such standards of dietary management and menu making are objectionable, however, if they lead to a tendency to "one-sided" regimens. To accept the advice, whether openly stated or implied, to live on a single dietary article, however inexpensive and digestible it may be, is to overlook the fundamental principles that are satisfied by variety in the diet. The fruits and green vegetables may be comparatively expensive when judged solely as sources of food fuel; but they furnish salts and vitamins and "roughage" or "ballast," adding suitable bulk to highly concentrated foods like the cereals, meats, fats and milk products. No cereal or meat offers any considerable supply of lime to the organism; nor are the cereal proteins taken as a whole and by themselves ideal combinations from the standpoint of the present day science of nutrition. The vegetables and fats are appropriate supplements to make a better balanced diet. In his aphorisms applicable to food conditions in war time, Bayliss[4] has said, "Take care of the calories, and the protein will take care of itself." Yet this accomplished physiologist wisely guards against misunderstanding by adding that it is well to insure the presence of accessory factors by taking fresh fruit and salad. Let the novice be cautious in accepting the invitation of the food advertiser when the latter overlooks the advice of the student of nutrition. Without being limited to any single item of food, let us see whether, in the words of Lusk, "we have the intelligence to fitly utilize for the welfare of mankind the resources which God and nature have placed in our hands."

ISOLATION OF TETANUS TOXIN

Heretofore tetanus toxin and other toxins as well as ferments have defied the efforts to isolate them from the mixtures in which they naturally occur. For this reason we know little of the real nature and chemical structure of these remarkable substances; but a way to progress seems to have been found, as London and his co-workers in the Institute for Experimental Medicine in Petrograd[5] now report that under certain conditions tetanus toxin and pancreatic ferments may be carried down on colloidal particles. They find that by the addition of 17 per cent. of ammonium sulphate to culture fluids in which tetanus bacilli have been growing; by centrifugation, the resulting sediment being thrown away; and then by the addition of from 1 to 3 per cent. more of ammonium sulphate, a sediment is obtained which contains the tetanus toxin. This sediment may be dried in vacuum and rinsed repeatedly with ammonium sulphate without thereby reducing the toxicity of the toxin, as minute a quantity as 0.00000002 gm. being fatal for white mice in two days after subcutaneous injection. They also report that

2. Read, B. E., and Tottingham, W. E.: Tritico Nucleic Acid, Jour. Biol. Chem., 1917, **31**, 295.
3. MacKinnon: Experiments in Teaching Food Values, Bull. 49, University of Illinois, Aug. 6, 1917.
4. Bayliss, W. M.: The Physiology of Food and Economy in Diet, London, Longmans Green & Co., 1917.
5. London and Aristovsky: Russk. Vrach, 1917, **16**, 341. London and Pakhotina: Ibid., p. 342.

by a similar treatment of pancreatic juice with 20 per cent. ammonium sulphate, the amylolytic ferment may be secured in what looks like a practically pure form, while with 30 per cent. the proteolytic ferment, and with 50 per cent. the lipolytic ferments are carried down. These remarkable results indicate that under certain conditions, which vary in each case, tetanus toxin and pancreatic ferments attach themselves to particles and thus become obtainable in nearly pure form. This discovery may mark a long step in advance in the study of toxins and ferments in general, the same principles no doubt being applicable to many other toxins and ferments than those mentioned.

THE CONTROL OF CHILD MORTALITY IN ENGLAND

The causes of high child mortality, particularly in the earliest years of life, are attributed to quite different circumstances by persons approaching the subject from somewhat different standpoints, traditions or experience. The fact is that the circumstances are undoubtedly both numerous and complex, varying with localities as well as with different strata of society. In any attack on a problem of great complexity, it is usually helpful to take into careful consideration the views of those who have had large experience and responsibility in the matter. Hence we are impelled, in connection with a topic that seems trite to some but is nevertheless always before us for earnest debate, to refer to a comparatively recent report of Sir Arthur Newsholme,[1] medical officer to the Local Government Board, London. He offers these comments: Maternal ignorance is sometimes regarded as a chief factor in the causation of excessive child mortality. It is a comfortable doctrine for the well-to-do person to adopt, and it goes far to relieve his conscience in the contemplation of excessive suffering and mortality among the poor. This doctrine has found favor in occasional official reports and in miscellaneous addresses. It embodies an aspect of truth, but it is mischievous when it implies, as it sometimes does, that what is chiefly required is the distribution of leaflets of advice, or the giving of theoretical instruction as to the matters of personal hygiene. Of course, carelessness (the detrimental effects of which the British authority places above ignorance), intemperance, poverty, overcrowding, defective sanitation, industrial employment of married women, the large size of the families of the poor, and other factors enter into consideration in any study of unnecessary child mortality. But in contrasting the wives of the wage-earners with the wives of men belonging to other classes, Newsholme has arrived at the conviction that the difference, apart from the handicap of the former in respect of housing, food supply and sanitation, in the main is one of ability to secure the assistance required in the various contingencies of maternity and early childhood. In England the chief means for rendering this assistance are furnished under the Midwives Act and the Notification of Births Acts. The notification within thirty-six hours enables visits to be made on behalf of the public health authority as early after notification as is thought necessary. The Midwives Act regulates the practice of midwives who attend more than half of the total confinements in England and Wales, these being as a rule the cases in which the additional medical and nursing assistance already referred to are most needed.

1. Forty-Fifth Annual Report of Local Government Board, 1915-1916, supplement containing report on child mortality at ages from 0 to 5, in England and Wales, H. M. Stationery Office, London, 1916.

THE GASTRIC SECRETION IN INFANCY

It seems to be well established at present that the glands which secrete gastric juice in adults are rarely idle. Even during starvation there is a detectable production of typical gastric secretion — of what Carlson has termed the hunger juice. In adult man the acidity of this fluid tends to be lowered by the regurgitation of alkaline pancreatic and intestinal secretion through the pylorus into the stomach. Taylor[1] has recently discovered that this formerly unsuspected secretion of gastric juice proceeds in the empty stomach of infants also. The acid thus poured out is often as concentrated as that found in the adult stomach during hunger. The secretion contains pepsin; and the more profuse it is, the higher its acidity appears to be. In contrast with what is believed to be the case in the adult, however, Taylor reports that this secretion in the infant is not neutralized in the stomach, but flows out into the small intestine. Regurgitation through the infant's pylorus does not occur. The stomach of a starving infant can apparently secrete from 50 to 200 c.c., or more, of highly acid juice daily. This equals, as Taylor remarks, the amount Engel obtained in his case of pyloric stenosis, which has served as the clinical basis for the theory that hyperacidity or hypersecretion of the gastric juice is an etiologic factor in that disease. In the light of the fact that active gastric juice seems to be available in unexpected quantity and potency, we can understand Taylor's contention that the theoretical objections to tube feeding in premature infants no longer are valid. Deprivation of food is frequently used as a remedial measure in certain digestive disturbances. Taylor suggests that therapeutic starvation in acute alimentary disorders and in summer diarrheas may owe its success in part to the heightened tonus of the alimentary tract, and in part to the pouring out of highly acid detoxicating and disinfecting gastric juice into the small intestine.

PRIMARY TUBERCULOSIS OF THE TONSILS

In recent years the tonsils have been regarded as the portal of entry for many diseases, but it does not appear that examination of tonsils after removal has yielded much information of value in regard to their supposed relationship to disease elsewhere. Mitchell,[2] however, has recently published some interesting observations from Edinburgh on primary tuberculosis of the faucial tonsils obtained from children with

1. Taylor, Rood: Hunger and Appetite Secretion of Gastric Juice in Infants' Stomachs, Am. Jour. Dis. Child., October, 1917, p. 258.
2. Mitchell, A. P.: Primary Tuberculosis of the Faucial Tonsils in Children, Jour. Path. and Bacteriol., 1917, **21**, 248.

tuberculosis of the upper cervical lymph nodes, and from children with enlarged tonsils only and without evidence of tuberculosis of the cervical glands or elsewhere. In the first group were 100 children and six adults. In no case was it possible to establish the presence of tuberculosis prior to removal and examination of the tonsils. The tonsils were rarely painful, and there were no symptoms except swelling of the upper cervical nodes, which in about one fourth of the cases was slight and in the rest rather extensive. On microscopic examination forty-one, or 38 per cent., of the tonsils were definitely tuberculous. Animal inoculation in ninety-two cases gave twenty positive results, the bovine type of bacillus being isolated in sixteen. There were 100 cases, all in children, in the second group with enlarged tonsils only. The cervical glands were palpable in all. Microscopically nine of these tonsils were tuberculous also, all nine giving positive results on inoculation. The type of organism in four was bovine, in two human, and in three undetermined.

The tubercles in the tonsils were situated near the deeper portions of the crypts, and also directly beneath the surface mucosa as well as deep in the tonsil close to the capsule, the first two being the favorite locations. The position of the majority of the tuberculous foci in places within easy access of the oral cavity may be taken as suggesting infection by way of the mouth rather than by way of the blood or lymph by backward transport. The absence of any signs of pulmonary tuberculosis in such cases as these studied by Mitchell may be regarded as evidence that the lesions in the tonsils are primary and not the result of infection from the sputum, and also that the cervical lymph nodes are probably secondarily infected from the tonsils. The latter conclusion would point to the necessity of removal of the tonsils in operation for removal of tuberculous cervical lymph glands. The importance of the milk supply as a source of the infection in cases of tonsillar tuberculosis is emphasized by the fact that in many instances in the series under consideration the infecting organism was of the bovine type. Indeed, the results recorded by Mitchell, which are of special interest because of the large number of cases in which he found tuberculosis, should stimulate to other and even more extensive studies of tonsils, removed for whatever reason, in order that their relation to tuberculous infection and possibly also to other conditions may be determined still more precisely than is the case at the present time.

War and the Activation of Health Interests.—The problems of tuberculosis, venereal disease, insanity and recreation, which, even with all our highly intelligent and energetic propaganda, have hitherto interested only a handful of specialists, comparatively speaking, have suddenly become the common concern of all the branches of the federal and state governments which have anything to do with the fighting forces, and of everybody who has a son or brother or sweetheart, or even a mere acquaintance, in khaki or serge or linen. The prospects are that the American soldier will be the most "protected" and best cared for individual that the world has ever seen, and that there will be protection and care left over for at least a part of the civil population.—The *Survey*.

Medical Mobilization and the War

IN FLANDERS' FIELDS

In reproducing in these columns, October 6, the poem "In Flanders' Fields," by Dr. John McCrae, Montreal, now in France, it was stated that the poem had appeared in the New York *Times*, credited to Capt. John "McRae." In its issue for the same week—October 3—the *Outlook* published the poem under the caption "From His Note-Book," with the following note:

> In a note-book found upon the body of Second Lieutenant A. H. W. Beatty, of the Manchester Regiment, says "Answers," the following verses were found. He had evidently jotted them down shortly before the action in which he met his death. There is something prophetic in them—as though the writer had some foreknowledge that his own time was coming.

The original publication of "In Flanders' Fields" was in *Punch* (London), Dec. 8, 1915, page 468. It appeared anonymously—the common practice of *Punch*—the name of the author being given only in the index of the volume. There it is credited to "McCree, Lt. Col. John"—evidently a typographical error. It is curious that in both *Punch* and the New York *Times* the author's name is spelled incorrectly, and in each differently.

Below is another poem by Lieut.-Col. John McCrae, from the *Spectator* (London), June 30, 1917:

THE ANXIOUS DEAD

O guns, fall silent till the dead men hear
Above their heads the legions pressing on;
(These fought their fight in time of bitter fear
And died not knowing how the day had gone.)

O flashing muzzles, pause, and let them see
The coming dawn that streaks the sky afar:
Then let your mighty chorus witness be
To them, and Caesar, that we still make war.

Tell them, O guns, that we have heard their call,
That we have sworn, and will not turn aside,
That we will onward till we win or fall,
That we will keep the faith for which they died.

Bid them be patient, and some day, anon
They shall feel earth enwrapt in silence deep,
Shall greet, in wonderment, the quiet dawn,
And in content may turn them to their sleep.

—John McCrae.

Physicians Recommended for Commission in the Medical Reserve Corps

During the week ending October 20, 224 physicians were recommended to the Adjutant-General of the Army for commission in the Medical Reserve Corps, the proportion being forty-two captains and 182 lieutenants.

New Red Cross Director-General

Jesse H. Jones, Houston, Texas, has been appointed director-general of military relief of the American Red Cross to succeed John D. Ryan, who was recently appointed to membership on the War Council.

Albany Competes

Dr. Henry L. H. Shaw, Madison Barracks, New York, enters the name of Albany in the competition of cities marked by patriotic physicians. In Albany there are 176 physicians, of whom 148 are members of the County Medical Society; forty-six have received commissions, and forty-one are now in active service; fourteen have been rejected on account of physical disability, age, etc. This gives a percentage of 26 for all physicians, and 31 for members of the County Society, not including those whose applications were rejected.

New Jersey State Society Contributes to Belgian Relief

The Journal is informed by the Belgian Relief Committee of the Emergency Aid of Pennsylvania that the Medical Society of New Jersey, through its treasurer, Dr. Alexander Mercer, Newark, has contributed $1,000 for Belgian relief. This contribution has been forwarded to the Belgian Minister of State, Monsieur de Sadeleer, to be used to aid the Belgian children who are ill and destitute. In order to save the lives of these children it has been necessary to take them out of invaded Belgium for a little while, and a special arrangement has been made through the Dutch legation so that this work is systematically carried on like the "Country Week" plan. The children are taken to Holland, fed, nourished and brought back to health, and then returned to their parents.

Unit of Women for France

The first unit of women doctors and dentists for service in a base hospital in France has been equipped by the Women's Hospital, New York, under the direction of Dr. Rosalie Slaughter Morton, president of the Women's Hospital, and Dr. Elizabeth Johnson Van Slyke, superintendent. The members of the unit are: Drs. Dorothy Child and Florence C. Child, both of Philadelphia; Ethel Lyon Heard, Galveston, Texas; Esther L. Blair, Dixmont, Pa.; Esther E. Parker, Cornell, N. Y.; Marion L. Stevens, New York City; G. F. Nevins and Helen L. H. Woodroffe, San Francisco, and deLam Kinney, New York City, a dentist. Miss Martha Townsend, a graduate nurse of the Women's Hospital, who has served with the Fourth Canadian Contingent at Saloniki and has the rank of lieutenant in the Canadian Army, will accompany the unit, which is now fully equipped and will soon sail for France.

Government Control of War Risk Beneficiaries

In the Congressional Amendment to the Act of Sept. 2, 1914, establishing a Bureau of War Risk Insurance (H. R. 5723), there is ample provision for insuring the families of enlisted men who are war risks in the Army and Navy under present conditions. There is due compensation of widow and children for loss of support by death or disability, and paragraph 3 of section 302 (p. 10), states that the injured shall be provided, where necessary, with governmental medical, surgical and hospital service, and with artificial limbs, trusses and other appliances, "*Provided*, That nothing in this Act shall be construed to affect the necessary military control over any member of the Military or Naval establishments before he shall have been discharged from the Military or Naval service."

In other words it will not be possible to defraud the government through any of these channels, since all beneficiaries of the government through the European war will remain under military control until their relation with the government ceases.

Confers Degrees on Distinguished Foreign Medical Officers

On Convocation Day, October 12, the University of Michigan conferred the degree of Master of Arts on the following representatives of the medical profession among our allies: Capt. John Gilmour of the British Army: contributor to the epidemiology of the plague; decorated by his king for distinguished service in South Africa and in Flanders; Major Edouard Rist of the French Army: member of the Legion of Honor; at one time in charge of the quarantine station at Suez; well known authority on tropical diseases and on tuberculosis; Col. Thomas Herbert Goodwin of the British Army: distinguished scholar and soldier; possessor of the Order for Distinguished Service and commander of the Order of St. Michael and St. George; one of the few survivors of the first British force in France; gentle in word and in manner, resolute in action; Col. Charles Dercle of the French Army: member of the Legion of Honor; recognized student of Arabic, author of a French-Arabic dictionary; received ninety-seven separate wounds from a shell explosion at one time; distinguished scholar and soldier.

French Medical Students and the War

The *Presse médicale* of October 6 reproduces the decision recently voted at a conference of representatives of the medical department of the army and of the medical departments and deans of the various universities and the schools of pharmacy, with the undersecretary of state for the medical department in the chair. It was arranged that for the first year students, who are to be summoned next April, the practical work for the whole year is to be crowded into the winter semester, thus enabling these students to pass before April their examination in this line for the whole year. For those already in army service, this instruction is to be given in the army zone so far as it does not interfere with military exigencies. The examinations are to be held by a university examining board, including also a regular army medical officer. This will enable the candidates to win, according to their status in the examination, military titles corresponding to corporal, sergeant, etc., in the other branches of the army. A new title, *sous-aide-major*, has been recently created for the purpose, and it has been decided that the title of *aide-major* can now be conferred on an advanced undergraduate. The university certificate to be given by the examining board will be the equivalent for the usual final examinations of the two semesters. The authorities are planning to organize practical courses at points where dissecting amphitheaters are available, and the students can be released to study there at intervals, as the airmen go back for courses in aviation. It is realized that if the instruction of the medical students is not allowed to go on within the normal range of time, at the end of the war the medical schools would be swamped with the number of students returning to complete their courses. It has been recognized further that the practical experiences at the front with the sick and wounded have a high educational value. The French authorities for years have accepted the medical course given by the Jesuits in their college at Beyrouth as entitling to practice not only in Syria but in France as well. The only restriction made was that members of medical faculties in France should conduct the examinations, and professors were sent out there for that purpose until the war broke out. The new arrangements just concluded plan a similar system of sending a university examining board to conduct the examinations of the medical students at the front.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

"War Session"

The eighth annual session of this congress, a "War Session," convened in Chicago, October 22. As is customary, practically all of each day was devoted to special clinics in Chicago hospitals.

The first evening session was held in Orchestra Hall on October 22. John Philip Sousa, conducting the Great Lakes Band, entertained the audience before the arrival of the speakers of the evening. His patriotic marches prepared his auditors for the stirring addresses which followed.

The meeting was called to order by the retiring president, Dr. Fred B. Lund, Boston, who introduced Dr. A. J. Ochsner, chairman of the Committee on Arrangements. Dr. Ochsner welcomed "the distinguished collection of surgeons, especially of military surgeons," stating that they are the most useful members of the medical profession at this critical time. The work of the Committee on the Standardization of Hospitals, which had just closed its meeting, he felt sure would be an inspiration to every man to work toward the standardization of hospitals in his community. The great purpose of the meeting was to become thoroughly familiar with the wonderful work that the Surgeons-General of the Army and Navy and the Public Health Service were doing. "This body of men can help because it is composed of men who are clean in their work, in their mind and in their morals, and they can shorten the war and lessen by hundreds of thousands those who will be lost during the war."

Address of Dr. Lund

Dr. Frederick B. Lund said that there were about 14,000 medical men already enlisted and ready for service and that they needed about 8,000 more, but that medical conscription would not be necessary. He spoke of the wonderful service that had already been rendered by the men in charge of the units that were in France, and of the other men who had volunteered their services and attached themselves to the British Expeditionary Forces two or three years ago. He traced step by step the growth of America's participation in the war. "To the older men among us," he said, "the war has brought the priceless opportunity of doing something unselfish before we die. To the younger man the Army and Navy give abundant opportunity to be of service and to show his skill if he has any." He closed his address with a recitation in the form of a poem, indicting Germany for her

crimes against civilization, arousing his audience to a thunderous outburst of patriotic applause.

The President, Dr. John T. Clark

Dr. John T. Clark, Philadelphia, was inducted into office as the new president. "It is a pleasure," he said, "to sit as an auditor in this assemblage of military speakers who are devoting their time and attention to military affairs. They stand in the ranks who deal with salvage rather than destruction." He spoke of the wonderful progress that had been made in the matter of life saving devices that are already in use and of the many others which were promised which would revolutionize medicine and surgery. He was convinced that medicine would come out of this war far richer than when it entered it.

Address of Secretary Daniels

Secretary Daniels of the Navy said that it was to the physicians that the nation turned in time of war with supreme confidence in the belief that by preventive measures they could save the lives of the youths who are willing to rally to the standard, and he wished to express the thanks of America to the men who were making the great sacrifice of devoting their time and their skill to this purpose. He urged that the physicians use their great influence in stamping out the most destroying evil that touches American youth. The hour has struck when the prudery which has made us shut our eyes to this evil is at an end. We cannot win this war unless our soldiers and sailors have steady nerves and clear heads. Men do not have these unless they live straight lives. To put 10,000,000 men under arms and let a portion of them be diseased and make no check on the immoral surroundings that we place them in would be unjust to the nation and unfair to the men. For the first time in the history of the world our country has started on a new line. We have recognized the evil and no longer whisper about it in dark corners. The peril of today is not merely the German guns. In the English army 78,000 men are out of battle because of venereal disease. Congress has passed a law and put it in the hands of our officials to carry forward measures more drastic than were ever dreamed of before. During the last year because of these diseases 141,000 days were lost in the service of the Navy. One person out of every 112 in the Navy had to be treated and almost as many in the Army. We should quit trying to use the poultice when we need the surgeon's knife.

A Message from President Woodrow Wilson

During the evening the following telegram was received from President Woodrow Wilson and read by Dr. C. P. Davis: "To the Clinical Congress of Surgeons of North America: My warmest greetings and best wishes. It cheers us all to see thoughtful, patriotic work done in such good spirit. Woodrow Wilson."

Owing to illness Dr. Franklin Head Martin was unable to be present to introduce the distinguished representatives of the Army and Navy and the visitors from abroad, so Major Edward Martin was requested to take his place.

Address of Surgeon-General Gorgas

Surgeon-General Gorgas said that he had looked forward with dread to the necessary enlargement of his corps on account of the war and had expected to have considerable trouble in the management of so many well informed medical men, but he was happy to say that everything had gone smoothly and there had been no trouble. He thought the fact that he had scrambled along for six months in complete unison with his staff, which contained many eminent men, should have been mentioned in the eulogies that had been showered on him by the other speakers. When he consulted his records he found that not one had been court martialed or had spent a day in the guardhouse. The nation is engaged in the most important war of all history and we must acknowledge that it had responded most nobly in all its branches and not swerved away. No part has been called on to respond so promptly as the medical profession, and he thought it was fair to point out that they had measured up to all that could be expected. He closed by saying that no civilian agency had been of such great service to the government as organized medicine, and he wished to thank the congress of surgeons as all other societies for so full heartedly rendering this aid.

Address of Admiral Braisted

Admiral Braisted, surgeon-general of the Navy, spoke principally of the work of the National Board of Medical Examiners, which had been carrying on its work for two years and reporting from time to time. Its third examination had just been completed. The quality of the examination has been recognized everywhere. It has recently been announced that the Mayo Foundation would receive licentiates without further requirements. Many of the states have arranged to accept the certificate on registration. It had been deemed advisable to go on with the examinations during the period of the war and conduct them even more frequently, going to the larger cities and bringing them before the interns of the hospitals. In the examination just completed there were twenty-nine candidates. The next examination is in January. "It is the privilege of few men to do many great things and the National Board of Medical Examiners," said Dr. Braisted, "is one of the great things of the world."

Address of Surgeon-General Blue

Surg.-Gen. Rupert Blue of the Public Health Service said that this is the time for the estimation of values, and that everything that leads to efficiency brings us nearer victory. He was thankful to announce that the health of the United States was in better condition today than ever before. There had been an awakening of the consciousness of the American people regarding the prevention of disease, and the water and food supplies, the inspection of schools and the control of communicable diseases had all been placed on a good basis. Research has tracked infection to its lair and provided new methods for its control. With the knowledge that we must fight came the realization that these sanitary measures must be followed, and out of this war will come a better, stronger and more enduring national health.

Colonel Goodwin of the British Army

Col. T. H. Goodwin, R. A. M. C., said that Great Britain and America were in this great fight side by side with a common object, identical ideals and with the certain expectation of a mutually attained victory in the future—although probably not in the near future. When he came here five or six months ago Great Britain was in straits owing to the scarcity of medical men necessary, and they owed an unending debt of gratitude to America for the way in which she had responded. Since that time 900 medical officers and nearly 500 nurses have gone across to help on the western front, and their work would be helpful beyond description.

Colonel Dercle of the French Army

Col. C. Dercle of the French Medical Corps received a most hearty welcome. "The manifestations of sympathy moved him more," he said, "because he realized they were meant less for him than for France herself." He spoke of the battle of the Marne where the French army under the command of its chief, Major Joffre, covered itself with glory. "The French," he said, "intimated to Germany to stop—and they have stopped." He could not describe the treasures of devotion he witnessed. The deaths of the men had never been a cause of discouragement on the part of those who followed. On the contrary, there have always been many willing to occupy the vacant places. He highly approved of everything he had seen in the training camps he had visited, and was sure that every physician and surgeon was able to do his war work when strikes the hour. "This was due particularly," he said, "to the personal enthusiasm and activity of Surgeon-General Gorgas, who is giving such wonderful encouragement to every one who works in his service."

Lieut. John Philip Sousa, in a brief speech, said that it seemed to him the meeting was for the purpose of glorifying the medical profession. He then conducted the band in a series of numerously encored selections.

Address of Sir Berkeley Moynihan

"At midnight on Aug. 4, 1914, England—to her lasting honor—declared war against Germany, and at 8 a. m., Aug. 5, 1914, I became for the tenth successive generation a soldier of my sovereign," began Sir Berkeley Moynihan, and he was greeted with a furore of applause. From that time until he stepped aboard the boat at Liverpool he had practiced military surgery, thought of military problems and had lived with military people. There were about 30,000 medical men in England and one-third of them are wearing the king's uniform, and have seen active service or foreign service. In his center in Leeds they had a civilian hospital of 480 beds with a staff of four surgeons and four assistant surgeons. When the territorial system of hospitals was established throughout the country, Leeds was chosen as one of the centers, and they were asked to supply a military hospital of

520 beds. They agreed, and the men attached to the hospital staff became by that act officers in the territorial branch of the army. Of the eight surgeons there are three left at home, himself included—who is often in France, often in London and occasionally in Leeds. With that disabled staff, with the help of the practitioners in the neighborhood, they are running, with an efficiency he would not hesitate to display to the military surgeons of any land, a military hospital of 6,300 beds. The men of the Royal Army Medical Corps are both soldiers and doctors; as soldiers they go into any part of the line from the front trench to the base according to the needs at the moment. Since the war began up to the 25th of August, 1917, they had suffered 1,800 casualties. That number of their men had either been killed or wounded, or gassed or disabled from further service. The highest distinction which any Englishman can gain in the opinion of every Englishman is the Victoria Cross, and they had gained more than their share of that coveted distinction. Two members of the profession have won both the cross and the clasp, indicating that they have won the decoration twice. He paid high tribute to Surgeon-General Gorgas and Major Mayo for their work in connection with the Medical Reserve Corps and in preventive medicine. Ninety-eight per cent. of English soldiers have been voluntarily inoculated against typhoid with the result that they have had only 292 deaths from that disease and only 6,022 cases altogether, whereas in the South African War they had 57,684 cases with over 8,000 deaths, although this infinitely larger army lived under much more difficult circumstances. In many other directions they have helped to stamp out or reduce the prevalence of disease. He begged us never to forget that Germany is a great and formidable nation with an implacable hatred of them and of us, and said we might be sure that in this war with her reserves which come up fresh at the rate of a million and a quarter a year she will use against us every dirty device which she can think of. He believed that America would find as England had found that for her the war would begin when every man of military age in the whole country has offered his services and is prepared to surrender his life to his country.

Address of Major Crile

Major George W. Crile said that during his service in France he had heard no one express the opinion that the enemy was wavering or starving, that he was short of munitions or no longer fights a hard fight, or that the imperial power was crumbling. He had talked with many German prisoners and they were strong and well and well nourished. On the other hand, he had heard from British soldiers that when the Britain and the Teuton meet face to face the Teuton throws up his hands and surrenders, which shows that the Teuton has at least good judgment. He had come to know the British but had known the French less well; he had seen the Briton as a hero and had seen the same on the part of the French, and while he could conceive that the British and French might not win the war he knew that their bodies would never be taken away from the line. They might be buried there but they would never retreat. Everyone in France thinks that the war will be long. The opinion that the enemy is weakening, or is nearing a collapse, and that the war is almost over he had heard only since he arrived in New York. This shows a new danger—how extensive has been the peace offensive waged against the United States.

There are now six American hospitals in France serving with the British Expeditionary Forces. These units have taken over hospitals of from 1,600 to 2,000 beds; there are also several hundred men in the field service, ambulance corps and other capacities. These men know no fear and frequently shake hands with fate, but they stick to their tasks bravely and are men of whom we should all be proud. The British Medical Service has kept their army more free from colds and infection than the civilian population of Chicago. Their medical organization is so perfect that their transport never failed. The death rate from infection and wounds in the French and British lines has been reduced to an incredible minimum, and a vast army of soldiers has been returned to active service, wearing on their sleeves the insignia of having been wounded. The demands of surgery at the present moment are felt by every one; a new set of problems has arisen, and if they are to be solved we must abandon our more personal interests for the time being. Many surgeons must leave their practice and do for the wounded man what had been done for the diseased in every line of surgery. The same intense devotion toward the problems of the wounded soldiers would do for the soldier what had been done for the civilian who remains at home. It is a serious mistake to suppose that military surgery is surgery for the unskilled. It demands a greater versatility and the ability to stand in twelve-hour shifts and to meet every problem that arises in the sequence in which it comes. If a man is interested in any particular thing and says so, the stream is turned on him until he surrenders. More progress has been made in surgery of the chest and abdomen and in the treatment of wounds, of infection and hemorrhage and in the treatment of exhaustion in the past three years of the war than in any time before. This is not a war of men but of ideas, and when thousands are to be saved, what greater gain can be had than to discover means of prevention that may be applied?

Afternoon Session, October 23

At an afternoon session, held at the Congress Hotel, moving pictures of war methods were shown, and special addresses were given. The first address was that of Col. Thomas H. Goodwin of the British Army, in which he described the effect of the war on the English medical profession. Following this address was that given by Major Rist, characterized as the French Osler, on a similar subject, but applying to the French medical profession.

Address of Dr. Frank Billings

An address was then given by Dr. Frank Billings, head of the American Red Cross Commission to Russia, who has just returned from abroad. Dr. Billings brought a message both unencouraging and encouraging in its various aspects. He believes that politically and economically Russia is far from the disorganization pictured by so many writers. With the food now on hand, he is convinced that Russia could easily exist for another year. Numerous supplies of practically every kind are available. In one storehouse in Petrograd there are stored over 6,000,000 suits of underwear for the use of soldiers. However, there is some disorganization, and this shows its effect chiefly in intercommunication; the transportation of food, supplies and munitions is accomplished only with the greatest difficulty. There have been seven cabinets in Russia since the revolution, and these cabinets are created without definite authority, each cabinet having its backing within itself. Dr. Billings was convinced that in her strong young men, particularly Kerensky, who he believes is an honest man and a man who stands for country first, Russia will eventually find herself, and will become a democracy firmly founded possibly through a limited monarchy. The hospitals and the medical department of the army are admirably conducted; in fact, Dr. Billings believes it is equal to that of any in the world. There are certain surgical and medical supplies which Russia requires, but only a few. Before the war, Russia made no synthetic chemicals, but at the time he left, factories in Petrograd were turning out tremendous quantities of needed material. "Russia is making chemicals and drugs as efficiently as we are," said Dr. Billings, "though not to such an extent." He is convinced that after the war not a package of any kind marked "Made in Germany" for consumption in Russia will be received in Russia. Following the address of Dr. Billings, Capt. J. Gilmour of the British Army described the progress of a wounded man from the front to "Blighty."

Report of further meetings will appear next week.

NEWS OF THE TRAINING CAMPS

Fort Benjamin Harrison

ADDITIONS TO OUR WARMTH

At last the long-expected stoves for the barracks have been installed, and with their advent the spirits of the camp have ascended in proportion. Now the evening grind over the Army Regulations and Manual of the Medical Department will be a pleasure, since the tremor (frigidorum) will disappear.

Glad tidings of woolen clothing to be sold to the medicos by the quartermaster have reached a more authentic stage than L. O. (Latrine Order) No. 23. It is now understood that an order which provided that no more clothing be furnished by the government to any one until the entire National Army had been completely equipped has been rescinded. Of course, officers are not issued uniforms of any kind by the government, but they have the privilege of purchasing such supplies from the various quartermasters at cost price. The officers of the Medical Reserve Corps in active service are willing to take advantage of the low prices of the quartermaster's department in purchasing supplies, as the difference between these and the constantly ascending prices of the

retail merchants is tremendous. It is to be hoped that this purchase privilege will be lasting.

EQUIPMENT OF MEDICAL OFFICERS

More doctors are coming into the training camps constantly, and the variegated sort of equipment that they bring justifies some advice as to the necessities. True, umbrellas no longer appear in their equipment, but they still bring swords and rocking chairs, and, no doubt, if the military equipment establishments sold walking spurs and guard lines, some enthusiastic doctor would be induced to buy. A doctor ordered on active duty should purchase only the absolute necessities. The quarters that will be assigned are limited, and the military authorities will allow only a certain amount in weight and shape for transportation in campaign. It is folly, therefore, to load up with extra baggage, as the excess is destined to immediate shipment home.

The following list will cover all that is necessary for the winter season:

Uniforms.—One heavy weight serge uniform, with cap, for dress. A white linen collar and white cuffs must be worn with this uniform. Many of us find a white linen military stock more convenient than a stiff linen collar.

One olive drab service blouse, with two pairs of trousers, which it is usually possible to purchase at contract price from the government, though the latter privilege is by no means certain. The decorations on the collar of the blouse should be the letters U. S. R. and a caduceus on each side, the letters in front, the caduceus a short distance behind; on each shoulder, the bars indicating the rank, and around each sleeve, the proper distance above the wrist, a circle of brown braid.

No leather belt is worn outside of the blouse. A sword is unnecessary. The belt to support the trousers should be olive drab webbing.

Shirts.—Two olive drab, flannel. More may be obtained from the quartermaster at a very reasonable price. The collar ornaments for the shirt, when the blouse is not worn, are a caduceus on the left side, U. S. R. on the right side, near the front, with the rank designation a short distance behind it. It is better to buy the smaller size of these ornaments.

Puttes.—Leather, one pair, costing about $7. These must be purchased to fit.

Shoes.—One pair of Munson last, tan, a half size longer and one size wider than the shoe ordinarily worn. More shoes may be purchased from the quartermaster's stores on arriving at camp.

Overcoat.—A heavy regulation officer's coat. This also may be purchased from the quartermaster, but alteration will be necessary, and the quartermasters do not always have them in stock. It is better, therefore, to purchase it at home.

A sheepskin-lined, moleskin, short coat, with a fur collar, is very useful, though not necessary. This is called a "trench" coat.

A tan-colored rubber coat is essential, and a pair of light-weight rubber boots useful. These boots should be large enough to allow the wearing of a pair of felt slippers. The latter can also be used in the barracks.

Underwear.—Woolen; two suits.

Socks.—Two pairs, light weight woolen; two pairs, heavy weight woolen.

Gloves.—Woolen, olive drab.

All of these can be procured from the quartermaster on arriving at camp, provided, of course, his stock has not been depleted.

Hat.—A campaign hat, with an officer's hat cord, is necessary. This is to be worn on all occasions, except for dress.

Sweater.—A sweater is not provided for in regulations, but is allowed in camp for fatigue. This must be of the regulation olive drab color. The Red Cross sleeveless sweaters are a great comfort, but must be worn inside the shirts. The Red Cross wristlets are allowed and advisable, if of olive drab.

Pajamas.—Woolen pajamas are a necessity. Nightgowns are ridiculous.

Trunk.—One locker trunk, of regulation size. At present they cannot be procured from the quartermaster.

Cot.—A strong Gold Medal cot, higher than is usually sold—in fact, high enough to allow of placing the trunk underneath.

Bedding-Roll.—This must be purchased, but can be procured in camp for about $11.25.

Blankets.—Bring them with you. Thick, warm, woolen blankets, of dark color, preferably three. Two comforters—one woolen and one cotton, of strong material, the cotton to sleep on, the woolen to wrap up in.

Sheets.—Only the fastidious need sheets, and army life soon cures that disease. The sheet is about as useful at this time of year in barracks as a bedspread would be.

Pillow.—A small, thick, hard pillow, covered with dark material. A pillow slip is unnecessary.

Towels.—Turkish towels answer the purpose best. These can be purchased in camp, at a reasonable price, but it is well to bring several along.

The Red Cross comfort kit and toilet roll will be needed. A safety razor is best, as often one shaves without a mirror and with cold water.

Do not forget the tooth-brush, and to use it. If this has been neglected heretofore, practice its use before coming to camp.

In this connection, it will be well to add that it may serve a good turn to practice daily bathing, as it will be necessary in barracks. Also, it is *à propos* to remark that it would be well to bring your table and home manners with you, as you are expected to be house-broken while living with other men.

A small, light typewriter is a great convenience.

It will be possible to procure everything else needed on arriving at camp, except some ready money to carry you over until you cash your first pay check. I might add that pay vouchers are sent in on the 20th of the month, and not after, and pay therefor is received near the first, by check of large denomination, which it is not always easy to cash.

Instruction in camp is undergoing many changes leading up to actual service conditions, as, for instance, intensive equitation, gas-mask instruction, actual duty in the elaborately constructed trenches on the reservation, etc. Experiences in connection with these duties will be described in the succeeding numbers of THE JOURNAL.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

The strength of this command, officers and men at this time is 27,548 of which there are 149 sick in hospital and 286 sick in quarters. There are no cases of alcoholism and but 289 of venereal disease. Nearly all are cases of gonorrhea and only about twelve of these contracted since arriving here. Several cases of mumps and a case of scarlet fever constitute the infectious diseases.

The division is particularly free from serious diseases or surgical conditions, and the sanitary conditions are very good. The command is about immunized to typhoid and variola. Paratyphoid inoculations are nearing completion.

Thirty-First Division, Camp Wheeler, Macon, Ga.

Thirty-three medical officers recently arriving from the training camp at Fort Oglethorpe have almost filled the vacancies in this division. Others to come will complete the commissioned medical personnel in a very short time. The enlisted force is still over 400 short. The camp hospital, which has cared for all patients of the division, was closed on September 18. The medical officers' school was, of necessity, closed during the past week on account of the arrival of drafted men who came in by trainloads—from 1,000 to 4,000 a day. Pneumonia is the only serious disease in the camp. Twelve cases have occurred so far, with no deaths. Major Weil is making a careful study of all cases, in an endeavor to throw some light on the etiology, prevention and treatment of this, now the most fatal of all diseases in our camps. It is feared that the coming cold weather, with a shortage of heavy clothing, may cause an increase in the amount of pneumonia. The Public Health Service is doing good work in Macon and the country about the camp. Under the direction of Surgeon Williams, dairies, lunch rooms, ice cream factories and the like, are being put in good sanitary condition. The American Red Cross and the city of Macon have furnished the funds thus far.

The Commission of Training Camp Activities is beginning a campaign to clean up the city of Macon morally. The chief obstacle is a certain amount of clamor from those financially interested, who claim there is no vice in the city. The venereal wards at the hospital give these claims the lie.

A first aid station has been established in the city in order to care for soldiers who are injured or need medical atten-

tion while in the city. This is believed to be the first one of its kind established in the history of the Army.

On account of the breaking up of the Fifty-Sixth Depot Brigade, Major Livingston has been transferred to the One Hundred and Sixth Engineer Regiment.

ONE HUNDRED AND SIXTH SANITARY TRAIN, CAMP WHEELER, GA.

The camp hospital, maintained as a division hospital during the construction of the base hospital, was evacuated on the 16th instant. The transportation of 123 men unable to walk, and fifty-five ambulatory cases, was accomplished by Ambulance Companies Nos. 121 and 123, in two hours and forty minutes.

Major Lorin A. Greene and the Florida Field Hospital officers and men are to be commended for the efficient manner in which the camp hospital was conducted. Working under conditions naturally crude, and handicapped by many shortages, the handling of 888 sick soldiers was conducted.

One hundred and thirty-five men were drawn by the train from the incoming troops from Camp Gordon. It helps some, but we still need 400.

Major George A. O'Connell (Alabama) will command the third motor field hospital just authorized, and Capt. James A. Blackwell (Alabama) the third motor ambulance company.

The conduct of the train as a regiment seems to be working out well. Why the sanitary train is not authorized a train commander of equal grade with commanders of other trains is hard to understand.

Lieut. Edwin S. Byrd (Georgia) has returned to duty a full fledged benedict.

Major George F. Keenan (Massachusetts) represented the medical department of the division at the annual meeting of the Red Cross chapter at Macon, the past week. The needs of the hospital service were discussed, and cooperation urged.

The flooring and walling of the tents for the winter is nearing completion.

Lieut. Daniel Campbell (Florida) has returned from leave of absence as witness in an important murder trial in his home state.

BASE HOSPITAL NOTES

The hospital was opened for the reception of patients at 8 a. m. on Wednesday, October 17, just thirty-nine days from the time the first nail was driven.

The following buildings were then ready for occupancy: commander's and officers' quarters, administration, receiving ward, laboratory, patients and employees' mess hall and kitchen, medical wards 1, 3, 15 and 17, surgical wards 2, 4, 14 and 16, each numbered ward containing thirty-eight beds. As carpenters go out of one end of completed buildings beds for patients come in at the other end. This without interfering with the contracting force. One hundred and fifty stoves for heating have been authorized to be purchased locally and will be in place within a week. The operating pavilion will be heated by using surplus steam from sterilizing plant, and hot and distilled water for the laboratory will be obtained from the same source.

Patients began to arrive at 8:30 a. m., and by 4:30 p. m. 252 had been admitted. The arrival of new cases has kept pace with the utmost endeavor of the personnel but none have been turned away. Today, Saturday, we have ten wards open and 312 patients under treatment. Considering the shortness of the force and the other difficulties under which this work has been accomplished, the result is astonishing, but no more than should be expected of American soldiers. The mess officer deserves special mention for his efforts and results.

This unit has thus early demonstrated what can be done by intelligent, united effort, and every member has shown the proper *esprit de corps*.

Thirty-Fourth Division, Camp Cody, Deming, N. M.

Camp Cody, N. M., the Thirty-Fourth Division, is being formed of troops from the National Guard of Minnesota, the Dakotas, Nebraska and Iowa. Lieut.-Col. J. M. Coffin is division surgeon, and about a hundred medical officers of the division are already working under his direction.

The camp is situated just west of the city of Deming, occupying an area of 4 by 2½ miles, being part of an extensive "bolson" plain near the continental divide, at an elevation of about 4,400 feet, with isolated mountains around it in all directions at distances of from 6 to 50 miles. The Army sanatorium for tuberculosis at Fort Bayard is distant only 54 miles.

The health of the troops is excellent. The climatic and other local conditions are of the best, and the division surgeon has succeeded in preventing the introduction of disease from outside. Surgeons examine all incoming troops promptly on arrival, and isolate all patients with contagious disease. A board of five medical officers is examining all troops for incipient pulmonary tuberculosis. Capt. E. S. Bullock of Silver City, N. M., is president of this board. Similar boards make careful examinations along other lines. Capt. H. R. Carter, Jr., formerly of Johns Hopkins Medical School, is director of the board for cardiovascular examinations; Capt. L. C. Covington of Charleston, W. Va., of the board for ocular diseases and defects, and Lieut. H. Phillips of the Pennsylvania State Hospital for the Insane for mental disease and defects. Less than 0.5 per cent. of the troops have shown incipient pulmonary tuberculosis, 1 per cent. some form of conjunctivitis, and less than 1 per thousand serious mental incapacity.

VENEREAL DISEASE

Venereal diseases have resulted in admissions to the hospital at the rate of 2 per thousand. The municipal authorities in the city of Deming have cooperated loyally and zealously in combating these and other diseases at the source. The segregated district in the city has been abolished, and the reestablishment of houses of prostitution prevented.

Two cases of typhoid have developed among civilians. These infections have been traced in each case to a source outside the camp. No cases have developed among the soldiers, and vaccination against typhoid, paratyphoid and smallpox is being accomplished.

WATER SUPPLY

The water supply comes from wells from 70 to 100 feet deep. Previous examinations have shown the water to be pure, free from alkali and organic pollution, and careful examination of water from each of the four individual wells is now being conducted. An interesting character of the subsoil contributes to the safety of the water supply. The rainfall is very slight, and the water in the ground has come in from the mountains surrounding the plain. These water-bearing strata lie beneath a layer that is almost impervious. Water stands in unlined cisterns for months without apparent diminution, but there is evidence of an exceedingly slow capillary movement of subsoil water upward to replace that lost from the surface by evaporation. This water carries with it lime salts in solution, which are slowly deposited a foot or more below the ground surface as the water evaporates, and a considerable layer of "caliche" has thus been formed. This is used for surfacing streets and earthen floors.

Although the soil is thus impervious, the contamination of the surface by excreta and garbage is prevented for other reasons that are obvious. Cesspools in Deming have been replaced by connection with the sewerage system, and where open closets are still used, the dry earth system and fly tight boxes are required. Garbage is sold under contract, and other refuse is burned in the company incinerators over which all waste or dirty water from kitchens or other sources is evaporated.

INSTRUCTION OF MEDICAL OFFICERS

Recently an order was issued from Washington requiring courses of instruction for medical officers with divisions. Such a course of instruction was instituted in Camp Cody, October 1, ten days in advance of the receipt of the order. It is designed to cover the work that will be required of medical officers in campaign, and includes sanitation in camp and on the march, the care of the person, foods, cooking and mess management, as well as the study of Army Regulations, Manual of the Medical Department, organization of the Army, relation of the Medical Department to the rest of the Army, and other administrative work which is essential in an effective organization, and in which the Medical Department necessarily plays a very large part. The course is objective and practical, and includes participation in regimental, brigade and divisional maneuvers.

In the more specifically medical part of the course, regular conferences are held in the wards of the base hospital, at which regimental surgeons and others discuss with the hospital staff cases which they have sent in, paying especial attention to those in which the diagnosis at the base hospital differs from that on admission.

Lectures by specialists present with the division, or sent for the purpose, deal with various departments of military medi-

cine and surgery, diseases incident to life in the trenches, gas poisoning, and the special conditions that the Medical Department is likely to have to meet during the present war.

The physicians who have exchanged civilian life for the orderly round of military duties in the camp are finding the work heavy but full of professional and human interest. All are finding the well ordered life in the mountain air good for health and spirits, and are happy in the consciousness of giving increasingly efficient service to the United States.

Thirty-Ninth Division, Camp Beauregard, Alexandria, La.

Camp Beauregard, a National Guard camp, houses the Thirty-Ninth Infantry Division, composed of the National Guard units of Arkansas, Louisiana and Mississippi, and is under the command of Major-Gen. Harry B. Hodges. Only about 7,000 troops have arrived to date; but they are coming in rapidly, and a full division of 27,000 men will be here soon. The first medical officer to arrive was Major George F. Lull, commanding officer of the base hospital, who reported for duty, August 13. Lieut.-Col. William G. Schauffler, late surgeon-general of the New Jersey National Guard, who is division sanitary inspector, was the next arrival. Under his careful and efficient supervision the entire camp has been put in a most satisfactory sanitary condition. Next came Lieut.-Col. William Smart of the Medical Corps, who is division surgeon. Colonel Smart is a son of the late Surgeon-General Smart of the Army. At present time there are forty-five medical officers in camp. There are ten regimental infirmaries, one field hospital and the base hospital. The latter is located on a hill in the pine woods about 2 miles from the rest of the camp. The buildings are not yet quite complete, so the patients of the camp who are too sick to be treated in the regimental infirmaries or the field hospital are being taking care of in the Alexandria Sanatorium by members of the staff of the base hospital. However, the constructing quartermaster has given assurance that the base hospital will be sufficiently complete to receive patients during the present week. The personnel of the base hospital staff includes the commanding officer, Major George F. Lull, M. C., who brings to the position a wide experience acquired in Panama and on the Border, and the chiefs of the sections, as follows: medicine, Major J. B. Guthrie, professor of clinical medicine in Tulane University; surgery, Major John T. Burrus, High Point, N. C.; orthopedics, Capt. E. D. Fenner, professor of orthopedics in Tulane University; surgery of the head, Capt. W. C. Heisey, McKeesport, Pa.; neurology, Capt. John T. Sample, Saginaw, Mich., formerly medical house officer of Johns Hopkins Hospital; section of venereal diseases, Dr. Loyd Thompson, Hot Springs, Ark., editor of the *American Journal of Syphilis;* and laboratory, Dr. Charles Burhans, Cleveland.

MEASLES

An epidemic of measles broke out in the First Louisiana Infantry the latter part of August, and to date there have been about 100 cases. There are now twenty-seven cases, most of them comparatively mild. As these cases constitute the majority of the cases of illness in the camp, the clinical work of the staff of the base hospital has been comparatively light. The time is taken up with drills, classes on the ever present paper work, the bugbear of the medical reserve officer, French lessons and quizzes. The *esprit de corps* is excellent, and when the division goes to France, the base hospital should prove a most efficient unit.

TUBERCULOSIS SURVEY

A special detail of medical reserve officers and contract surgeons, headed by Major W. G. Owen, has been sent to the camp to make a survey of the entire command for tuberculosis. About 300 men are being examined daily, and so far three positive cases have been discovered. All men that show suspicious signs are placed in bed under observation for ten days with daily sputum examinations.

Seventy-Sixth Division, Camp Devens, Ayer, Mass.

Fire in the Army base hospital at Camp Devens, Ayer, Mass., believed of incendiary origin, periled the lives of 300 patients, but by prompt action, all patients were removed without casualty. The fire was extinguished before the main building was reached. The process of reconstruction is expected to go forward rapidly and the patients will be handled temporarily in other buildings.

Eighty-First Division, Camp Jackson, Columbia, S. C.

The cantonment at Camp Jackson is on a plateau northeast of Columbia. It occupies about 3,000 acres of land which only three months ago was largely under cultivation. Even now large fields of cotton can be seen about it. From the entrance of the camp to the base hospital a distance of over 2 miles must be traversed. The base hospital comprises eighty buildings, and the work is being rushed to completion. The hospital quarters for officers will be ready by the end of the week.

The camp is situated on a ridge, on the continuation of which Camden, the southern winter resort, is built. From this site the distant hills can be seen reaching the sky.

The field hospital contains no sick whose diseases are due to camp life.

The barracks have electric light and heat, latrines which are heated by stoves, and shower baths with hot and cold water. The drainage and sanitary arrangements are complete; these have been under the direction of Major Thomas J. Leary.

The base hospital is built on the highest level of the cantonment: "as the mountains are round about Jerusalem," so are the hills about Camp Jackson. The buildings can accommodate 1,500 patients, and are connected by covered porches; all are grouped about a center, access to which can be gained, thus providing safety against fire. Lieut.-Col. Kent Nelson is the division surgeon, and Major James F. Johnston, assistant and now sanitary officer. The commanding officer of the base hospital is Major Thomas J. Leary, a Regular Army man with experience in Panama, and in the Philippines under General Pershing. The chiefs of the staff of the base hospital are Major W. W. Herrick, internist; Major Richard H. Hutchings, psychiatrist; Major James Stone, surgeon; Capt. Henry Tucker, in charge of venereal diseases; Capt. John W. MacConnell, otolaryngologist; Capt. Frederick W. Baeslock, chief of the pathologic laboratory; Capt. Harrison A. Greaves, roentgenologist, and Capt. Burton Chance, ophthalmologist.

Major James F. Johnston was transferred, October 16, to the post of division sanitary inspector so ably conducted by Major Leary, who was appointed commander of the base hospital. The staff was organized as a central board, under Colonel Nelson, to decide on the acceptability of the rejected men found physically or mentally deficient by the regimental surgeons, who hold examinations of the drafted men daily. Assisting in this examination are Lieutenants Hart, Braun, Long, Gerhardt, Gibbs, Robbins, Woodhouse, Heard, Lattin and Pendleton. So far over 1,400 men have been rejected.

The city has opened its heart to the officers and men with true Southern hospitality, and already they are welcome to enter many a charming home. Entertainments have been prepared for all. The churches keep open their buildings Saturday nights, and a number of eat-shops have been established for the comfort of the soldiers visiting the town. Car lines have been extended to the camp, and it is hoped that express steam trains will run later. Every one is happy, and I have yet to see a man or officer with a "grouch." There are all kinds of sports, including baseball and football, but no "highballs," for South Carolina is "bone dry" to the advantage of the entire cantonment.

PERSONAL

Capt. Wayne Babcock, regimental surgeon, has been transferred to the base hospital at Fort McPherson.

Lieut. Stuart Hart, who had conducted the cardiovascular studies, was recalled to New York.

Capt. Burton Chance received his commission in September.

Lieutenant Birnie recently arrived from Fort Sill. He came to conduct the gas defense drills. A gas house is being constructed in which the gases will be demonstrated.

Saturday, October 6, many members of the base hospital were guests at a barbecue held at White Pond, an attractive sheet of water about 20 miles from Columbia. To most this was a unique feast. Besides the delicious food, the occasion gave the medical officers an opporunity to meet socially Generals Barth and McIver and many officers of the line.

Shortly after his arrival at the cantonment, Captain Tucker instituted an investigation of prostitution in Columbia in which he was ably assisted by several public spirited citizens who had become concerned over the ravages of the social evils. The name of every prostitute and many suspects and the location of all houses in which the trade is carried on is known. The Army of the United States, with cooperation of the civil authorities, can eradicate social diseases. Columbia is "bone dry," and if any argument for prohibition is needed, behold the National Army!

Eighty-Fifth Division, Camp Custer, Battle Creek, Mich.

Major John Ridlon has been in camp since October 16, and has given especially interesting and practical talks to the medical officers of this camp on conditions of orthopedic surgery. There was a large attendance at these meetings, as orders from the division surgeon requested every medical officer to attend. After hearing these lectures no one regretted having complied with the order, as the major presented the subject in such a way as to be of much benefit. He also delivered a course of practical talks on the care of the feet to a large number of line officers.

The medical society of Battle Creek (Calhoun County Medical Society) has passed resolutions making two regular monthly meetings instead of one. This was done for the purpose of bringing the medical corps of the division in closer touch with the profession of Battle Creek and things of medical interest other than from a military point of view. At the last meeting, October 2, Dr. Hugh T. Patrick of Chicago talked on "Diagnosis of the Functional from the Organal Diseases of the Nervous System." Major Lewis Wine Bremerman, Camp Custer, Mich., talked on "Diagnostic Points in Genito-Urinary." The meeting was well attended, both by regular members and by the medical corps of the Eighty-Fifth Division.

VENEREAL DISEASE

The subject of venereal diseases is paramount at this time. Calhoun County Medical Society passed special resolutions at the October 2 meeting, having in mind the protection of the soldier against these diseases.

Camp regulations are such that they require the isolation of all venereal diseases among soldiers, no passes being permitted to these men until they are free from infection and thus prevented from spreading the disease. Whenever it is possible to obtain from the soldiers who are infected the name of the women from whom they contracted the disease, it is forwarded to the health officer in Battle Creek. If this plan works out, there is no reason why venereal diseases in this particular division should not be reduced to a minimum, for there is no question that if the resolutions are carried out to the letter, the infected professional prostitute will find difficulty in transmitting her infection to others.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

The medical condition of Camp Grant continues to be satisfactory. Many of the cases in the base hospital are those found by the regimental surgeons in making their routine examinations of all the recruits, and are waiting for their discharge papers to come through. In justice to the local boards, it should be said that most of these cases are of such a nature that they could not be recognized at a single examination, but were brought to light by more extended careful observation.

In examining large numbers of recruits, it is necessary to use every device possible to save time that does not diminish the efficiency of the examination. It has been found most practical to have the examination of each man divided among several medical officers than to have each recruit completely examined by a single officer. The following method will run through about eighty an hour: Thirty recruits are admitted into the room at a time and are stripped. One physician weighs and measures the recruit, and notes the muscular development; another listens to the heart and lungs; the next examines the genitalia and for hernia, hemorrhoids and varicose veins; the fourth tests the muscles and joints; the fifth counts the absent teeth and looks at the nose and throat, and two men examine the eyes and ears. In addition it is often advantageous to vaccinate the recruits for smallpox and typhoid fever. In this case one man is assigned to each form of vaccination. With this division of labor, the line of recruits will pass through smoothly. All questionable recruits fall out of line and are passed on by the commanding officer and, if necessary, are told to report at a less busy time for a more extended examination.

Each medical officer has an enlisted man who records his findings on the proper form and passes it on to the next. In this way, when the recruit has finished his examination, there is a complete record of the findings ready for the signature of the commanding officer. The finger prints are taken by a noncommissioned officer.

The vaccinating officers usually have two helpers. For smallpox, the first washes the arm with soap and water, the second applies ether or alcohol. For typhoid, the first paints the arm with the tincture of iodin, and the second runs the sterilizer.

There have been few changes in the personnel in the last two weeks. The various departments are perfecting their organization and are running smoothly. The laboratory has started a menagerie which at present consists of several white mice. The personnel are rapidly becoming sophisticated, and have stopped looking for 5 yards of skirmish line.

Eighty-Seventh Division, Camp Pike, Little Rock, Ark.*

The arrival of forty-five medical officers from Fort Oglethorpe, October 19, marked the practical completion of the commissioned medical personnel of the Eighty-Seventh Division. These were assigned to the three field hospitals yet without officers and to four ambulance companies not having their full commissioned quotas. The remaining officers were divided among the various regimental infirmaries and the infirmaries of the depot brigade.

With the completion of the commissioned personnel, it is expected that the work of training will go rapidly forward, the enlisted personnel being drawn as rapidly as possible from the drafted army. A full and complete course of instruction will be carried out, being very similar in character to that given at the various medical training camps. While a large percentage of the medical officers in this division were former students at training camps, there is a certain percentage who were there only a short time, and a few who have had no special instruction along army medical lines. The plan as outlined provides for the training and instruction of the untrained by those who have had the advantage of the full course of instruction in training camps. This plan will not only give plenty of "work for idle hands to do," but also will add greatly to the interest of the "army medical game," and relieve to some extent the monotony that is sure to creep into camp life.

The work of examining the colored troops continues, and as the War Department is very anxious to expedite this work, the examining medical officers are not allowed to sleep on post. As soon as examined and given the triple typhoid vaccination and equipped, the colored troops are removed to other cantonments. An officer who traveled on one of the troop trains with these men makes the statement that wherever the troops were "paraded" for the purpose of exercise the populace unvariably commented on their soldierly appearance and the aptitude with which they acquired the drills.

The general health of the command remains good, measles being the prevailing ailment, and there being only about thirty or forty cases of that in a command of over 20,000. The number of cases of malaria is very small.

Weather conditions are better of late. The heat has been great during part of the day, and the nights are cold. The dust has also been a great hindrance to effective work whenever the wind blew. A good rain has laid the dust and steadied the atmosphere to a more nearly equable temperature during the past twenty-four hours.

Capt. G. H. Campbell, alienist at the base hospital, has become a major. Otherwise everything is "quiet along the Potomac" as regards promotions.

Eighty-Eighth Division, Camp Dodge, Des Moines, Iowa

The medical department at Camp Dodge is now a well organized institution. We have the distinction of being the first troops to arrive at the new National Army cantonment, and have played a considerable part in the work of the camp thus far.

August 25, thirty-three medical officers and 200 of the enlisted personnel of the Medical Department were sent from Fort Riley, Kan., to Camp Dodge. For most of us it was our first experience traveling with troops. When we arrived at Camp Dodge, very few of the barracks were completed, and none of the sewerage, water or lighting accommodations were installed. However, Major Fronk of the sanitary department had arrived before us and had made adequate measures for our care, although they were of a rather rough nature.

During the first two weeks spent here, Lieut.-Col. Shook, the division surgeon, organized the various regimental detachments and had them ready for the physical examination of the first men of the draft on their arrival, September 10. The rapidity and thoroughness with which these men were examined spoke well for this organized work. Since then the second increment of the draft army has arrived and all have

been examined, and the regimental surgeons are now having a little respite while awaiting the third increment of men, which will arrive about October 25.

About one week ago, forty-eight medical officers arrived from Fort Riley after the completion of their course of instruction at that place. These officers have been assigned to the several regiments, field hospital companies and ambulance companies, filling these several organizations, so that each now has their required number of officers.

BASE HOSPITAL

The base hospital was organized under the directorship of Major Craft, a Regular Army officer. As the new base hospital buildings were not completed, it was installed temporarily in four barracks provided for the use of the ambulance companies later on.

The new buildings for the base hospital are about 80 per cent. complete. November 1 is the date fixed now for the completion of this hospital. Meanwhile the base hospital is doing a rushing business in the temporary barracks in which they are now located.

"Colds," influenza and pneumonia are the predominating illnesses. Every venereal patient is confined to the hospital until the discharge ceases or the contagious stage is past. There have been three cases of delirium tremens due to the sudden cutting off of the liquor. Without doubt, the total abstinence of the soldiers from liquor will be the greatest step in disease prevention which the War Department has taken, and the draft men who have been excessive users, while suffering most at first, will be greatly benefited by their army life.

A number of surgical operations have already been performed successfully in the improvised operating room. This includes two cases of acute appendicitis.

The examination of the recruits has revealed 100 cases of diseased teeth and tonsils. The dental and nose and throat services of the base hospital are busy removing these foci of infection. This is a form of preventive medicine and surgery that has been neglected in other wars. While the sanitary department is busy removing the causes for disease in the physical surroundings of the men, our medical and surgical staffs are busy removing the causes for disease in the men themselves. It is impossible to estimate the value of these measures to the efficiency of our new Army.

There have been two deaths thus far, one acute mania and one from delirium tremens.

AMBULANCE COMPANIES

Four weeks ago the Red Cross ambulance company of Denver, under the command of Captain Hopkins, arrived. This company is composed chiefly of college men from the University of Denver and the University of Colorado.

Another Red Cross ambulance company arrived three weeks ago from Flint, Mich. It is composed of men from the automobile industries of Michigan, and was equipped by these concerns. Captain Winchester is in command.

NEWS NOTES

Major Black, M. R. C., Milwaukee, Wis., spent three days at the base hospital last week in his general inspection. He reported that the hospital and the type of work being done was excellent.

Major H. E. Mock has been relieved from duty at Camp Dodge, and has been called to the Surgeon-General's Office, Washington, D. C.

A tuberculosis board, headed by Captain Peck, arrived at Camp Dodge a few days ago, and began work immediately.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

Extracts from Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending Oct. 12, 1917

1. TOTAL STRENGTH OF TROOPS		1,000,680
Admission rate per 1,000	weekly	19.1
Non-effective rate	weekly	19.1
2. NATIONAL GUARD—STRENGTH		303,967
Admission rate all camps	weekly	20.5
Non-effective rate all camps	weekly	21.8
Camps showing admission rate higher than average:		
29th Division, Camp McClellan, Anniston, Ala.		21.3
31st Division, Camp Wheeler, Macon, Ga.		28.6
33d Division, Camp Logan, Houston, Tex.		24.1
34th Division, Camp Cody, Deming, New Mex.		21.9
35th Division, Camp Doniphan, Fort Sill, Okla.		26.4
36th Division, Camp Bowie, Fort Worth, Tex.		28.7
38th Division, Camp Shelby, Hattiesburg, Miss.		30.9
39th Division, Camp Beauregard, Alexandria, La.		28.6
40th Division, Camp Kearney, Linda Vista, Calif.		34.5
42d Division, Camp A. L. Mills, Garden City, L. I.		23.4
Camps showing non-effective rate higher than average:		
30th Division, Camp Sevier, Greenville, S. C.		24.5
31st Division, Camp Wheeler, Macon, Ga.		29.2
32d Division, Camp MacArthur, Waco, Tex.		32.4
33d Division, Camp Logan, Houston, Tex.		26.1
36th Division, Camp Bowie, Fort Worth, Tex.		29.8
38th Division, Camp Shelby, Hattiesburg, Miss.		36
39th Division, Camp Beauregard, Alexandria, La.		23.7
42d Division, Camp A. L. Mills, Garden City, L. I.		24.9
3. NATIONAL ARMY—STRENGTH		428,855
Admission rate all camps	weekly	19.1
Non-effective rate all camps	weekly	14.6
Camps showing admission rate higher than average:		
79th Division, Camp Meade, Annapolis Junction, Md.		19.7
82d Division, Camp Gordon, Atlanta, Ga.		22.2
85th Division, Camp Custer, Battle Creek, Mich.		20.2
87th Division, Camp Pike, Little Rock, Ark.		23.7
88th Division, Camp Dodge, Des Moines, Iowa		22.1
89th Division, Camp Funston, Fort Riley, Kan.		29.7
90th Division, Camp Travis, Fort Sam Houston, Tex.		31.6
91st Division, Camp Lewis, American Lake, Wash.		30.4
Camps showing non-effective rate higher than average:		
78th Division, Camp Dix, Wrightstown, N. J.		14.7
80th Division, Camp Lee, Petersburg, Va.		25
85th Division, Camp Custer, Battle Creek, Mich.		16.5
88th Division, Camp Dodge, Des Moines, Iowa		28.5
91st Division, Camp Lewis, American Lake, Wash.		28.3
4. VENEREAL DISEASE—		
Admission rate all troops		133.4
Admission rate National Guard (Camps)	annual	106.2
Admission rate National Army		204.8
Camps National Guard having rate above average:		
29th Division, Camp McClellan, Anniston, Ala.		139.3
30th Division, Camp Sevier, Greenville, S. C.		150.6
31st Division, Camp Wheeler, Macon, Ga.		254.5
33d Division, Camp Logan, Houston, Tex.		134.5
34th Division, Camp Cody, Deming, N. Mex.		134.2
35th Division, Camp Doniphan, Fort Sill, Okla.		114.9
36th Division, Camp Bowie, Fort Worth, Tex.		168.6
37th Division, Camp Sheridan, Montgomery, Ala.		107.1
38th Division, Camp Shelby, Hattiesburg, Miss.		235.7
39th Division, Camp Beauregard, Alexandria, La.		221.1
Camps National Army having rate above average:		
87th Division, Camp Pike, Little Rock, Ark.		1,108.3
89th Division, Camp Funston, Fort Riley, Kan.		479.4
90th Division, Camp Travis, Fort Sam Houston, Tex.		384.7
91st Division, Camp Lewis, American Lake, Wash.		229.8
5. NUMBER OF CASES OF PNEUMONIA		93
Highest number in any one camp	(Dodge)	10
NUMBER OF CASES OF MENINGITIS		16
Highest number in any one camp	(Shelby)	4

SPECIAL DISEASES REPORTED DURING THE WEEK ENDING OCTOBER 12, 1917

Division	Pneumonia	Dysentery	Malaria	Venereal	Paratyphoid	Typhoid	Measles	Meningitis	Scarlet Fever	Strength of Command
26th, Boston	..	..	..	..	..	..	..	..	..	.....
27th, Wadsworth	..	..	..	29	..	..	..	..	..	24 570
28th, Hancock	1	..	..	47	..	..	..	..	1	27,548
29th, McClellan	4	..	3	67	..	4	5	..	..	25,258
30th, Sevier	..	..	6	51	..	..	5	..	..	17,557
31st, Wheeler	3	2	7	56	..	..	36	..	..	11,462
32d, MacArthur	..	13	..	..	..	..	3	..	..	21,127
33d, Logan	1	26	9	44	..	..	1	..	..	17 026
34th, Cody	1	4	..	48	..	..	3	..	..	18 627
35th, Doniphan	2	1	5	44	..	..	11	..	2	19 874
36th, Bowie	..	..	6	57	..	..	9	..	..	17 572
37th, Sheridan	1	..	..	38	..	..	5	1	..	18,246
38th, Shelby	6	2	6	75	..	..	37	4	1	16,543
39th, Beauregard	2	..	8	22	..	..	34	..	..	5,147
40th, Kearney	..	..	..	12	..	..	..	3	..	7,143
41st, Greene	..	..	..	11	..	..	29	2	2	14,989
42d, A. L. Mills	4	..	18	20	..	..	9	..	..	25,677
76th, Devens	1	..	3	62	..	..	..	1	..	35.800
77th, Upton	..	..	..	50	..	..	1	..	..	23,085
78th, Dix	1	..	..	40	..	..	..	..	..	21,837
79th, Meade	1	3	1	16	..	..	..	..	..	22,849
80th, Lee	1	..	..	33	..	..	..	..	..	30 559
81st, Jackson	2	2	2	5	..	..	11	..	..	17 458
82d, Gordon	1	1	14	51	..	..	40	..	..	20,350
83d, Sherman	5	..	..	69	..	..	..	2	..	32,150
84th, Taylor	3	..	3	66	..	1	1	..	..	29,342
85th, Custer	..	..	..	15	..	..	..	..	1	18,290
86th, Grant	4	..	..	22	..	..	..	..	..	26,170
87th, Pike	6	1	10	503	..	..	49	..	..	23,603
88th, Dodge	10	..	..	42	..	..	1	..	..	22,887
89th, Funston	3	..	..	343	..	..	..	..	..	37,201
90th, Travis	4	1	15	236	..	1	..	..	..	31,971
91st, Lewis	8	..	..	156	..	..	1	..	..	35,303

	Regulars, U. S. Army, in U. S. only, 1916		Regulars in U. S. week ending Oct. 12, 1917		Nat'l Guard, All Camps and Dept., week ending Oct. 12, 1917		Nat'l Army, All Camps, week ending Oct. 12, 1917	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Admissions, diseases only, annual rate per 1000	....	613	....	910.8	....	1043.4	....	994.7
Pneumonia	....	2.59	6	1.4	30	4.3	50	6.0
Dysentery	....	3.97	4	0.9	49	7.1	8	0.9
Malaria	....	12.52	20	4.8	97	14.2	48	5.8
Venereal	....	91.00	214	51.6	660	96.7	1689	204.8
Paratyphoid	....	0.31	1	0.2	0	0	0	0
Typhoid	....	0.21	0	0	4	0.5	2	0.2
Measles	....	20.29	88	21.2	263	38.9	104	12.8
Meningitis	....	0.29	2	0.4	10	1.4	3	0.3
Scarlet fever	....	0.59	8	1.9	6	0.8	1	0.1

7. Deaths by Causes:

Lobar Pneumonia	7
Cerebrospinal Meningitis	3
Appendicitis	2
Myocarditis	2
Bronchopneumonia	2
Delirium Tremens	2
Cerebral Abscess	1
Acute Hemorrhagic Enterocolitis	1
Acute Pulmonary Edema	1
Cardiac Dilatation	1
Tuberculous Enteritis	1
Epilepsy	1
Septic Meningitis (Otitis Media)	1
Suicide	5
Traumatism	3
Traumatism by Firearms	2
Homicide	2
Fracture of Skull	2

ORDERS TO OFFICERS OF THE MEDICAL CORPS

Colonel HENRY D. SNYDER, Medical Corps, to be relieved from duty at the Medical Supply Depot, 628 Greenwich St., New York, and directed to proceed to Washington, D. C., and report in person to the Surgeon-General of the Army, for duty in his office.

Major EDWARD W. LAZELL, Medical Corps, Colorado National Guard, specialist in nervous and mental diseases, to be relieved from Field Hospital Company No. 4, Camp Mills, Garden City, L. I., N. Y., and to report in person to the commanding general thereof and to the commanding officer of the base hospital for duty in his specialty.

Lieut. COLE B. GIBSON, Medical Corps, Meriden Sanitorium, Meriden, Conn., who has passed the preliminary examinations for appointment in the Medical Corps of the Army, to active duty and to proceed to Fort Oglethorpe, Ga., and report in person to the commandant, Medical Officers' Training Camp, Camp Greenleaf, that place, for the required course of instruction.

Lieut.-Col. EDWARD M. TALBOTT, Medical Corps, to be relieved from duty at El Paso, Tex., and to proceed to Fort Oglethorpe, Ga., and report in person to the commandant, Medical Officers' Training Camp, Camp Greenleaf, for duty as instructor.

Colonel JAMES M. KENNEDY, Medical Corps, now at duty at the Port of Embarkation, New York, to proceed to Washington, D. C., and report in person to the Surgeon-General of the Army for consultation, and on completion of this duty to return to his proper station.

Major ELMER E. KEISER, Medical Corps, Pennsylvania National Guard, 3932 Tulip St., Tacony, Philadelphia, to proceed to Camp Green, Charlotte, N. C., and report in person to the commanding general thereof for duty.

Lieut.-Colonel NELSON GAPEN, Medical Corps, now on duty in the office of the chief surgeon, aviation section, Signal Corps, in this city, be detailed as an additional member of the board appointed in paragraph 47, Special Orders, No. 246, War Department, Oct. 20, 1916, for the purpose of examining and determining the fitness of persons who make application for commission in the aviation section of the Signal Officers' Reserve Corps.

Major FREDERICK H. FAUCAR, Medical Corps, to be relieved from duty with the 35th Infantry, Nogales, Ariz., and to proceed to Washington, D. C., and report in person to the Commandant, Army Medical School, for temporary duty.

Major THOMAS J. LEARY, Medical Corps, to be relieved from his present duties at Camp Jackson, Columbia, S. C., and to report in person to the commanding general, 81st Division, that camp, for duty as commanding officer of the base hospital.

Major JAMES F. JOHNSTON, Medical Corps, from his present duties at Camp Jackson, Columbia, S. C., to report in person to the commanding general, 81st Division, that Camp, for duty as sanitary inspector.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Birmingham, Ala., for duty as Medical Member of Examining Board, Lieut. GASTON W. ROGERS, Birmingham.

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. ERNEST A. MOORE, Coatopa.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. HOWARD P. RANKIN, Midway.

To Monmouth, N. J., for duty with the signal battalion, from Fort Oglethorpe, Lieut. AUSTIN F. J. BOYD, Emelle.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, from Fort Oglethorpe, Lieut. JAMES L. BOWMAN, Union Springs.

To San Antonio, Tex., Kelly Field, for duty, Lieut. EDGAR W. DALY, Birmingham.

Arizona

To Boston, Mass., for a course of instruction in military roentgenology, Lieut. RICHARD FAVOUR, Keams Canon.

To Fort Oglethorpe, for instruction, Lieut. HARRY J. FELCH, Phoenix.

To New York City, U. S. Army General Hospital No. 1, Lieut. THERON H. SLAUGHTER, Miami.

Arkansas

To Camp Grant, Rockford, Ill., for duty in the division of ophthalmology, section of surgery of the head, Capt. JOHN H. HARVEY, Waldron.

To Camp Pike, Little Rock, for temporary duty, Lieut. SAMUEL McA. MAUNEY, Earl.

California

To Camp Kearny, Linda Vista, Calif., for duty, Capt. ALFRED E. BANKS, San Diego; for temporary duty, Lieuts. EDWARD E. TREDWAY, Pasadena; ARTHUR L. DAVIS, for the examination of troops, and for service in the base hospital in his specialty, from Presidio, San Francisco, HAROLD W. WRIGHT, San Francisco.

To County Hospital, Los Angeles, Calif., for a course of instruction in military roentgenology, Lieut. RAY A. CARTER, Los Angeles.

To Fort Benjamin Harrison, for a course of instruction in tuberculosis examinations, Lieut. ROYAL W. DUNHAM, Los Angeles.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, Capt. STERLING BUNNELL, San Francisco; Lieut. WARREN B. ALLEN, Oakland.

To Reorganization Camp, Presidio, San Francisco, for the purpose of instructing medical and line officers and to examine orthopedic cases, Capt. MAYNARD C. HARDING, San Diego.

Colorado

To Camp Sherman, Chillicothe, O., for duty, from Fort Benjamin Harrison, Lieut. CHARLES E. CONGDON, Breckenridge.

To Fort Oglethorpe for instruction, Lieut. WILLIAM R. CAMPBELL, Denver.

Connecticut

To Camp Upton, Yaphank, L. I., for temporary duty, Lieut. CHARLES L. BANKS, Bridgeport.

District of Columbia

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM R. BUCHANAN, Washington.

To Camp Robinson, Sparta, Wis., for duty with the 17th Field Artillery, from Fort Oglethorpe, Lieut. HOWARD W. BARKER, Washington.

To New York, N. Y., for orthopedic work, Lieut. JAMES H. ALLEN, Washington.

To Washington, D. C., for duty as member of a medical research board, Aviation Section, Signal Corps, Majors EDWARD G. SEIBERT and WILLIAM H. WILMER, Washington.

Florida

To Camp Shelby, Hattiesburg, Miss., for temporary duty, Lieut. JOHN A. NEWNHAM, Clermont.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieuts. SHALER A. RICHARDSON, Jacksonville; JOHN T. BRADSHAW, San Antonio.

Georgia

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. JOHN W. BRADLEY, Woodstock.

To Camp Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. HAROLD I. REYNOLDS, Athens.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. DAVID M. SILVER, Augusta.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, Capt. CHARLES E. DOWMAN, Atlanta.

To New York, N. Y., for orthopedic work, Lieut. HUGH I. BATTEY, Atlanta.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, from Army Medical School, Lieut. ROBERT C. WALKER, Waycross.

To Walter Reed General Hospital, Tacoma Park, D. C., for duty in the surgical service, Capt. THOMAS C. DAVISON, Atlanta.

To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. JOHN H. PHILLIPS, Oakhurst.

Idaho

To Fort Sill, Okla., Camp Doniphan, for duty as member of board of medical officers for the special examination of the command for tuberculosis, Lieut. CLYDE E. WATSON, Nampa.

Illinois

To Camp Beauregard, Alexandria, La., for duty as member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. CLARENCE McK. CHEADLE, Rockford.

To Camp Grant, Rockford, Ill., for temporary duty, Lieut. John L. Rock, Chicago.

To Camp McClellan, Anniston, Ala., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. SAMUEL M. MARCUS, Chicago.

To Camp Meade, Annapolis Junction, Md., and report in person to commanding general and to the commanding officer of the base hospital for duty as assistant to the chief of the medical service, Lieut. HERMON H. COLE, Springfield.

To Camp Sherman, Chillicothe, O., for duty from Fort Benjamin Harrison, Lieuts. WALTER S. BEBB, Downers Grove; for duty in the division of ophthalmology section of surgery of the head, WALTER D. STEVENSON, Quincy.

To Camp Taylor, Louisville, Ky., for temporary duty, Lieut. ELIOT C. DUMARS, Peoria.

To County Hospital, Chicago, Ill., for instruction in military roentgenology, Lieut. HAROLD SWANBERG, Chicago.

To Fort Oglethorpe for instruction from County Hospital, Chicago, Ill., Lieuts. FRANK A. BEARDSLEY, Champaign; for instruction, FRANK E. NAGEL, Secor.

To Fort Sheridan, Ill., for the purpose of examining in his specialty, Capt. CHARLES RICKSHER, Kankakee.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, from Fort Benjamin Harrison, Capts. THOMAS E. CHERRY, Cowden; CHARLES J. SWAN, Evanston.

To Philadelphia, Pa., for a course of instruction in orthopedic surgery from Fort Benjamin Harrison, Lieut. MANDEL A. I. COHEN, Chicago.

To Psychopathic Hospital, Ann Arbor, Mich., for intensive training in his specialty, Lieut. ISAAC J. FRISCH, Chicago.

To Rockefeller Institute, New York, for duty from Camp Devens, Ayer, Mass., Lieut. ARTHUR W. ALLEN, Robinson.

To Washington, D. C., for duty in Surgeon-General's Office, Capt. PAUL B. MAGNUSON, Chicago.

To his home and return to the inactive list of the Medical Reserve Corps, after completing course at University of Pennsylvania, Lieut. GEORGE H. SCHROEDER, Chicago.

Indiana

To Camp Cody, Deming, N. M., for duty, from Camp Grant, Rockford, Ill., Major JOHN W. SLUSS, Indianapolis; for duty in the surgical service, Lieut. REAVILL M. WALDEN, Evansville.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieuts. ANDREW S. NEWELL, Converse; HOMER S. HEWITT, De Motte; DAVID E. REED, Russellville.

To Camp Funston, Fort Riley, Kan., for temporary duty, Lieut. GEORGE H. SMITH, Newcastle.

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM W. HOGGATT, French Lick.

To Camp Lewis, American Lake, Wash., for duty with the Thirtieth Engineers, Lieut. WILLIAM C. MOORE, Summitville.

To Camp McClellan, Anniston, Ala., base hospital, for duty in the surgical service, Lieut. ELMER C. SINGER, Fort Wayne.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Benjamin Harrison, Capt. JOHN E. METCALF, Gary; Lieuts. HERMAN M. BAKER, Holland; JAMES L. WALKER, La Fontaine; RUFUS J. DANNER, Terre Haute.

To Fort Oglethorpe, for instruction, Lieuts. GEORGE B. KENT, Mulberry; CLARENCE L. BOCK, Muncie.

To Indianapolis, for the purpose of assuming charge of physical examining unit, Aviation Section, Lieut. BERNARD J. LARKIN, Indianapolis.

Honorably discharged from the Medical Reserve Corps of the Army, Capt. CHARLES E. BARNETT, Fort Wayne.

To the inactive list of the Medical Reserve Corps, on account of being physically disqualified for active service, Lieut. EDGAR H. MYERS, South Bend.

Iowa

To Camp Pike, Little Rock, Ark., for temporary duty, Capts. JOHN W. CUNNINGHAM, Dumont; GUTHEIR McCONNELL, Waterloo.

To Camp Grant, Rockford, Ill., for duty, Lieuts. WALTER A. SMITH, Donnellson; ELMER J. LAMBERT, Ottumwa.

To Camp Funston, for temporary duty from Medical Officers' Training Camp, Fort Riley, Kan., Lieut. GEORGE S. BAWDEN, Davenport.

To Fort Oglethorpe, for instruction, Lieut. MEREDITH MALLORY, Des Moines.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieut. THOMAS R. GITTINS, Iowa City.

To Philadelphia, for a course of instruction in orthopedic surgery, Lieuts. THOMAS F. THOMSEN, Charter Oak; FRANK G. MURPHY, Mason City.

To Washington, D. C., for duty as member of a medical research board, Aviation Section, Signal Corps, Major EUGENE R. LEWIS, Dubuque.

To inactive list of the Army, Capt. JAMES E. KESSELL, Des Moines.

Kansas

To Camp Lewis, American Lake, Wash., for duty in the Division of Ophthalmology, section of surgery of the head, Lieut. FRANK C. ELLIS, Frederick.

To Camp MacArthur, Texas, for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. LEWIS S. HARVEY, Dunlap.

To Fort Riley, for duty, Major FREDERIC W. O'DONNELL, Junction City; for duty in the surgical service, from Camp Funston, Capt. JAMES C. BUTLER, Stafford; for duty as assistant roentgenologist, Lieut. GUY A. FINNEY, Wamega.

To Kansas City, Mo., for a course of instruction in military roentgenology, from Fort Riley, Lieut. PAUL V. ANNADOWN, Centralia.

Kentucky

To Camp Grant, Rockford, Ill., for temporary duty, Lieut. GUY D. GRIGGS, Hitesville.

To Camp Taylor, Louisville, Ky., for temporary duty, Lieut. ALBERT STEWART, Frankfort.

To Fort Riley, as assistant in ophthalmology, section of surgery of the head, from Medical Officers' Training Camp, Lieut. GEORGE A. ROBERTSON, Louisville.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieuts. WILLIAM D. REDDISH, Lexington; DAVID C. DONAN, Morganfield.

To inactive list of the Medical Reserve Corps on account of being physically disqualified for active duty, Lieut. ALBERT C. BOND, Ashland.

Louisiana

To Camp Beauregard, Alexandria, La., for temporary duty, Lieut. COVINGTON H. SHARP, New Orleans.

To Camp Sevier, Greenville, S. C., for duty in the surgical service, from Fort Oglethorpe, Lieut. THADDEUS I. ST. MARTIN, Houma.

To Camp Wheeler, Macon, Ga., for duty from Fort Oglethorpe, Lieut. WILEY R. BUFFINGTON, New Orleans.

To Fort Oglethorpe, for instruction, Lieuts. JOSEPH W. GARRETT, ROBERT J. PLATT, New Orleans.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, from Fort Oglethorpe, Lieut. PAUL K. RAND, Alexandria.

Honorably discharged from Medical Reserve Corps of the Army, Lieut. FRANCIS F. ROUGON, Oscar.

Maine

To Camp Mills, Garden City, L. I., for duty with Field Hospital Co. No. 4, from Allentown, Pa., Lieut. DUDLEY C. KALLOCH, Portland.

To Portland, for duty as medical member of the Examining Board, Lieut. JULIUS C. ORAM, Portland.

Maryland

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. EDWARD P. SIMPSON, Chance.

To Camp Lee, Petersburg, Va., for temporary duty, Lieut. WILLIAM H. KABLE, Woodsboro.

To Camp McClellan, Anniston, Ala., to act as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

To Phills Clinic, Baltimore, for intensive training in his specialty, Lieut. HENRY E. AUSTIN, Baltimore.

To Plattsburg Barracks, N. Y., for duty in connection with ophthalmology and otolaryngology, section of surgery of the head, Capt. ALEXANDER D. McCONACHIE, Baltimore.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, from Fort Oglethorpe, Lieut. HARRY C. SCHMEISSER, Baltimore.

To San Antonio, Texas, Kelly Field, for duty, Lieut. FREDERICK C. W. REINHARD, Baltimore.

To Washington, D. C., and report in person to the Surgeon-General of the Army for temporary duty in his office, Major ROBERT T. TAYLOR, Baltimore.

Massachusetts

To Army Medical School, Washington, D. C., Lieut. JOSEPH H. McGUIRE, Boston.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieuts. WILFRID T. LA FORTUNE, Fitchburg; DENNIS J. LOWNEY, New Bedford.

To Camp Devens, Ayer, Mass., for temporary duty, Capts. CORNELIUS J. McGILLICUDDY, Boston; for the purpose of examining the troops in his specialty and for duty in the neuropsychiatric buildings at the base hospital, from Fort Adams, R. I., MORGAN B. HODSKINS, Palmer; for duty in the surgical service, from Fort Ethan Allen, Vt., Lieuts. ARTHUR W. ALLEN; for duty in the hospital laboratory, FRANK G. NORBURY, Boston; for temporary duty, RICHARD P. MacKNIGHT, Fall River; FRANK W. MATHEWSON, New Bedford.

To Camp Lee, Petersburg, Va., for duty in the genito-urinary and dermatologic section, Capt. JOSEPH B. SAYLES, Taunton.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Benjamin Harrison, Lieuts. CLARENCE H. DOBSON, Conway; CLARKE S. GOULD, Norwood; VICTOR A. AIMENE, Winchester.

To Camp Upton, Yaphank, L. I., for duty in the venereal section from Camp Wadsworth, Spartanburg, S. C., Lieut. FREDERICK R. SANBORN, Lynn.

To Niagara, N. Y., for duty with Field Hospital No. 30, from Field Hospital, No. 28, Capt. Dana W. Drury, Boston.

To Fort Sam Houston, Texas, for duty in the Department Laboratory, Lieut. Charles B. Spruit, Boston.

To Rockefeller Institute, for a course of instruction in laboratory work, Lieuts. GEORGE H. BIGELOW and DAVID M. HASSMAN, Boston.

To Syracuse, N. Y., for the purpose of making examination of the troops in his specialty, Lieut. HENRY R. VIETS, Boston.

To his home and return to the inactive list of the Medical Reserve Corps, Capt. CHARLES WHELAN, Higham.

Michigan

To Camp Custer, Battle Creek, Mich., for duty in connection with the Division of Otolaryngology, section of surgery of the head, Major ROY B. CANFIELD; for duty, from Fort Benjamin Harrison, Lieuts. HARRY M. MALEJAN, Ann Arbor; WYNAND VANK. PYLE, Detroit; JAMES A. HUMPHREY, Lansing.

To Camp Devens, Ayer, Mass., for temporary duty, Capt. JOHN F. CONNERS, Detroit.

To Camp Sherman, Chillicothe, Ohio, for duty from Fort Benjamin Harrison, Capt. EARL M. McCOY, Grand Ledge; Lieuts. SHELDON B. YOUNG, Caseville; ROBERT C. MOEHLIG, Detroit; DAN H. EATON, Kalamazoo; JOE DEPRESS, Zieland.

Honorably discharged from the Medical Reserve Corps of the Army, from El Paso, Texas, Lieut. CULLEN H. HENDRY, Detroit.

Minnesota

To Camp Bowie, Fort Worth, Texas, for duty in connection with the division of ophthalmology, section of surgery of the head, Lieut. HARRY E. CANFIELD, Willmar.

To Camp Dix, Wrightstown, N. J., for temporary duty, Lieut. CHARLES D. SQUIRES, Rochester.

To Camp Dodge, Des Moines, Iowa, for temporary duty, Capt. HERBERT A. MORRISS, Minneapolis.

To Camp Grant, Rockford, Ill., for temporary duty, Lieut. ARTHUR I. ARNESON, Emmons.

To Camp Kearny, Linda Vista, Calif., for temporary duty, Capt. RALPH J. SEWALL, Crosby.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieuts. ADOLPH M. HANSON, Faribault; OSCAR M. KLINGEN, Minneapolis; HARRY B. ZIMMERMANN, St. Paul.

Mississippi

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. ARCHIBALD W. McNEAL, Ruleville.

To Camp Logan, Houston, Texas, for duty in connection with the Division of Otolaryngology, section of surgery of the head, Capt. EWING F. HOWARD, Vicksburg.

To Camp Wheeler, Macon, Ga., for duty from Fort Oglethorpe, Lieut. HENRY F. SPROLES, Vicksburg.

To Jackson, Miss., to examine applicants and appointment in the Medical Reserve Corps of the Army, and on completion of this duty to return to his home and to the inactive list of the Medical Reserve Corps, Lieut. INMAN W. COOPER, Jr., Meridian.

To San Antonio, Texas, Kelly Field, for duty, Lieut. SAMUEL T. WELLS, Alligator.

Missouri

To Camp Bowie, Fort Worth, Texas, for duty as member of a board of medical officers of the special examination of the command for tuberculosis, from Fort Riley, Lieuts. SAMUEL R. JOHNSON, St. Charles; ALLEN G. WAINWRIGHT, St. Louis.

To Camp Funston, Fort Riley, Kan., for temporary duty, Capt. ALVIN H. SIPPY, St. Louis.

To Camp Hancock, Augusta, Ga., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. ROBERT E. BYRNS, St. Louis.

To Fort Leavenworth, Kan., for duty in the Department Laboratory, Lieut. BERNARD J. McMAHON, St. Louis.

To Camp Logan, Houston, Texas, for duty in connection with the division of otolaryngology, section of surgery of the head, Lieut. GEORGE A. GRIOT, St. Louis.

To Camp Sherman, Chillicothe, Ohio, for temporary duty, Lieut. JOHN J. DeVEREAUX, Hawk Point.

To Camp Wheeler, Macon, Ga., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Capt. SOLON CAMERON, St. Louis.

To Fort Oglethorpe, for instruction, Lieuts. WILLIAM C. VERNON, Kansas City; ARTHUR L. FUERTH, St. Louis.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieut. ELLIOTT K. DIXON, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty in his specialty, Capt. GUTHRIE E. SCRUTCHFIELD, Farmington.

To Washington University, St. Louis, for three weeks' intensive training, Lieut. SHERMAN B. HIBBARD, Kansas City.

To the inactive list of the Medical Reserve Corps after completion of a course at University of Pennsylvania, Philadelphia, and Rockefeller Institute, New York, Capt. JOHN G. HAYDEN and Lieut. FRANK R. TEACHENOR, Kansas City.

Montana

To Camp Dodge, Des Moines, Iowa, for temporary duty, Capt. ADOLPH T. GILHUS, White Sulphur Springs.

To Camp Grant, Rockford, Ill., for temporary duty, Lieut. HERBERT HAYWARD, Darby.

Nebraska

To Camp Bowie, Fort Worth, Texas, for duty as a member of the board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. JOHN F. ALLEN, Omaha.

Nevada

To Camp Kearny, Linda Vista, Calif., for duty, from Fort Douglas, Utah, Capt. EDWARD D. GIROUX, Winnemucca.

New Hampshire

To Camp Beauregard, Alexandria, La., for duty in the surgical service, from Fort Oglethorpe, Capt. GEORGE M. WATSON, Manchester.

To Camp Devens, Ayer, Mass, for duty, Capt. JAMES J. POWERS, Manchester.

To Fort Oglethorpe, for instruction, Lieut. WALLIS D. WALKER, Portsmouth.

New Jersey

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieuts. CLARENCE A. GREENLEAF, Olean; HOWARD R. RARIG, Palmyra; MORRIS N. LEAVER, Quakertown.

To Camp Funston, Fort Riley, Kan., for duty in connection with the divisin of otolaryngology, section of surgery of the head, from Medical Officers' Training Camp, Fort Benjamin Harrison, Lieut. JEREMIAH B. WINTERSTEEN, Moorestown.

To Camp Pine, New York, for duty with the 15th Field Artillery, from Fort Oglethorpe, Lieut. EDWARD B. ROGERS, Collinswood.

To Camp Sevier, Greenville, S. C., 30th Division, to act as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Lieuts. EDWARD S. KRANS, Plainfield; for duty in the surgical service from Fort Oglethorpe, WALTER F. KEATING, Ridgewood.

To Camp Upton, Yaphank, L. I., for temporary duty, Lieut. GUSTAVE A. BRAUN, Newark.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, Lieuts. MARTIN W. REDDAN, JOSEPH G. DENELEBECK, Trenton.

To San Antonio, Tex., Kelly Field, for duty, Lieut. SAMUEL L. SALASIN, Atlantic City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. EDWARD S. KRANS, Plainfield.

New Mexico

To Camp Doniphan, Fort Sill, Okla., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. ORIN J. WHITCOMB, Raton.

New York

To Ann Arbor, Mich., State Psychopathic Hospital, for intensive training in his specialty, from Medical Officers' Training Camp, Fort Benjamin Harrison, Lieut. ABRAHAM M. RABINER, Albany.

To Army Medical School, Washington, D. C., for duty in the bacteriologic laboratory, Lieut. BYRON D. WHITE, Brooklyn.

To Camp Custer, Battle Creek, Mich., for duty, from Ft. Benjamin Harrison, Capt. GUSTAVE R. MANNING, New York; Lieuts. GEORGE E. HENDERSON, Brooklyn; WILLIAM OSTROW, Buffalo; CHARLES E. E. PANNACI, Gloversville; LEON M. KYSOR, Hornell; MAXIMILIAN FRICK, New York City; EDWARD E. GILLICK, Niagara Falls; EDWIN D. JACKSON, Rochester; ALEXANDER N. LOEWENSTEIN, Troy.

To Camp Devens, Ayer, Mass., for temporary duty, Lieut. THOMAS A. D. SOMERS, New York City.

To Camp Funston, Fort Riley, Kan., for duty in connection with the division of ototlaryngology, section of surgery of the head, from Fort McDowell, Calif., Capt. KENT E. WILLIAMS, Rome; for temporary duty, from Medical Officers' Training Camp, Fort Riley, Lieut. FREDERICK D. KEPPEL, Licklaen.

To Camp Hancock, Augusta, Ga., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Capt. CHARLES H. ERWAY, Elmira.

To Camp McClellan, Anniston, Ala., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieuts. PATRICK J. HIRST, Middle Grove; FRANK J. HERBIG, Staten Island.

To Camp Meade, Annapolis Junction, Md., for temporary duty, Lieut. JAMES H. PAUL, Jamesville.

To Camp Shelby, Hattiesburg, Miss., for duty in the base hospital laboratory, Lieut. RAYMOND SANDERSON, Poughkeepsie.

To Camp Sherman, Chillicothe, O., for duty, from Fort Benjamin Harrison, Lieuts. VALENTINE V. BOURKE, Brooklyn; FREDERICK J. PFISTERER, Ceres; GEORGE J. GEISLER, Hempstead; MILTON G. BURCH, Hornell; VALENTINE C. BAKER, JAMES G. CORNEILLE, LEWIS GREENBERG, JAMES D. MURPHY, JOSEPH SCHAPIRO, New York City; WATSON A. LAWRENCE, Valhalla;

CLINTON E. GOODWIN, Weelsport; LEWELL T. GENUNG, Worcester.

To Camp Taylor, Louisville, Ky., for temporary duty from Medical Officers' Training Camp, Fort Benjamin Harrison, Lieuts. ALFRED BRAUN, SAMUEL H. GEIST, DANIEL POLL, New York City.

To Camp Upton, Yaphank, L. I., for temporary duty, Lieuts. HYMAN I. TEPERSON, Brooklyn; RALPH D. REID, Central Islip; MAX CLIMAN, HUGO A. SIEBENEICHEN, New York City.

To Camp Wadsworth, Spartanburg, S. C., and Camp Lee, Petersburg, Va., for the purpose of inspecting the methods in use for the protection of the command against infection with venereal diseases, and on completion to return to his proper station, Major EDWARD L. KEYES, Forest Hills.

To Camp Wadsworth, Spartanburg, S. C., 27th Division, to act as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Lieut. EPHRAIM GOLDMAN, New York City.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. ARTHUR B. GRAVES, Perrysburg.

To Cornell Medical College, New York, for a course of military roentgenology, Lieuts. AARON M. MORGENLANDER, New York City; JOHN C. KNAPP, Philmont.

To Fort Oglethorpe for instruction, Lieuts. DANIEL E. L. STEDEM, Buffalo; WEBB W. WEEKS, New York City; ASA R. DIMOCK, Valatie.

To Neurological School, University of Pennsylvania, Philadelphia, Pa., for intensive training in brain surgery, Capt. IRA COHEN, New York City.

To New York, for orthopedic work, Lieut. NORMAN McL. DINGMAN, New York City.

To Philadelphia, Pa., for a course of instruction in orthopedic surgery, Lieuts. EDWARD A. FLYNN; CARL C. YOUNT, New York City.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, Capts. MORRIS B. BEECROFT, Albany; GEORGE BAEHR, New York City.

To report in person to the surgeon-general of the Army for duty in his office, Capt. GEORGE DRAPER, New York City.

To the inactive list of the Medical Reserve Corps of the Army, Capt. LOUIS HAUSWIRTH, New York City, Lieut. NATHAN D. GARNSEY, Kinderhook.

North Carolina

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. ISRAEL W. MAYERBERG, Selma.

To Camp Jackson, Columbia, S. C., for duty with Ambulance Co. No. 31, Lieut. WILLIAM E. BRACKETT, Caroleen.

To Gettysburg, Pa., reorganization camp for duty, Lieut. KELSO A. CARROLL, Raleigh.

Honorably discharged from the Medical Reserve Corps of the Army, Lieut. RALPH E. DEES, Greensboro.

North Dakota

To Camp Dodge, Des Moines, Iowa, for temporary duty, Lieut. BENJAMIN FRANKSON, Rugby.

To Fort Douglas, Utah, for duty, from Fort Riley, Lieut. JACOB F. BRENCKLE, Kulm.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Capt. ROBERT D. CAMPBELL, Grand Forks.

Ohio

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieuts. RALPH E. POWERS, Akron; EMIL E. WOLF, Cleveland; THEODORE J. KASINSKI, Youngstown.

To Camp Sherman, Chillicothe, O., for duty, from Fort Benjamin Harrison, Lieuts. JOHN T. GIBBONS, Celina; JOHN R. CRUM, Forest; JAMES D. VARNEY, Greenfield; for temporary duty, ALDO V. SIBERT, Lima; ROBERT M. FULWIDER, Zanesfield.

To Camp Taylor, Louisville, Ky., for temporary duty, from Medical Officers' Training Camp, Fort Benjamin Harrison, Lieut. ELMER A. KLEIN, Norwood.

To Fort Oglethorpe for instruction, Lieut. GEORGE C. SMITH, Mansfield.

To Philadelphia, for a course of instruction in orthopedic surgery, Lieut. ALLEN N. WISELEY, Ada.

Oklahoma

To Camp Doniphan, Fort Sill, Okla., for temporary duty, Lieuts. CHARLES W. BACON, Enid; R. EARLE SMITH, Gracemont.

To Philadelphia, for a course of instruction in orthopedic surgery, from Army Medical School, Lieut. DAVY L. GARRETT, Altus.

To the inactive list of the Medical Reserve Corps of the Army, Lieut. FRANK L. CARSON, Shawnee.

Oregon

To Fort Douglas, Utah, for duty, Lieut. JAMES A. BEST, Pendleton.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Capt. LAWRENCE SELLING, THOMAS M. JOYCE, Portland.

To the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, Lieut. HAROLD T. ALLISON, Heppner.

Pennsylvania

To Camp Beauregard, Alexandria, La., for duty in the surgical service, from Fort Oglethorpe, Lieuts. LEOPOLD M. JACOBS, Philadelphia; NORMAN A. TIMMONS, South Bethlehem.

To Camp Custer, Battle Creek, Mich., for duty with the division of ophthalmology, section of surgery of the head, Lieuts. MARION H. POWERS, Point Marion; for duty from Fort Benjamin Harrison, JOHN H. MURRAY, Punxsutawney.

To Camp Dix, Wrightstown, N. J., for temporary duty, Lieut. SNOWDEN K. HALL, Pittsburgh.

To Camp Hancock, Augusta, Pa., Lieuts. HAROLD S. BROOMALL, for duty in the division of otolaryngology, section of surgery of the head; from Fort Oglethorpe, EDWARD W. COLLINS, Philadelphia; for temporary duty from Fort Oglethorpe, THOMAS A. BOOTH, Boothwyn; EDMOND B. PIPER, Philadelphia.

To Camp McClellan, Anniston, Ala., for duty in connection with the division of otolaryngology, section of surgery of the head, Lieut. AARON L. BISHOP, Philadelphia.

To Camp Meade, Annapolis Junction, Md., for temporary duty, Lieuts. JAMES S. HAMMERS, Danville; EDWIN S. COOKE, Philadelphia; GEORGE G. GRAZIER, for duty in charge of the division of otolaryngology, section of surgery of the head, WILLIAM P. BARNDOLLAR, Pittsburgh.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Benjamin Harrison, Capt. FREDERICK A. RUPP, Lewistown.

To Camp Wadsworth, Spartanburg, S. C., for duty in charge of the division of ophthalmology, section of surgery of the head, from Camp McClellan, Anniston, Ala., Lieut. CHARLES M. STILES, Philadelphia.

To Camp Wheeler, Macon, Ga., for duty from Fort Oglethorpe, Lieuts. FRANKLIN P. LYTLE, Birdsboro; JOHN H. STEARNS, Delaware Water Gap; CHARLES C. CROUSHORE, Greensburg; EDWARD Y. ORD, McKeesport; PORTER M. WALL, Monongahela; VINCENT J. FENERTY, JACOB J. RUTBERG, Philadelphia; WILLIAM J. STEWART, Pittsburgh; WALTER M. BERTALET, THOMAS M. SNYDER, Reading.

To Canal Zone, Panama Canal Dept., for duty, Capt. ISAAC H. JONES, Philadelphia.

To Fort Benjamin Harrison for duty in the bacteriologic laboratory of the base hospital, from Army Medical School, Lieut. CARL GOEHRING Pittsburgh.

To Fort Oglethorpe for instruction, Lieuts. HOWARD P. BLAKE, Altoona; CLIFFORD B. LULL, Philadelphia.

To Fort Riley for duty in the surgical service, from Fort Oglethorpe, Lieuts. GEORGE M. PURVES, ARTHUR R. WOODS, for duty in connection with the division of ophthalmology, section of surgery of the head, from Fort Benjamin Harrison, for duty in the bacteriologic laboratory, Philadelphia.

To Gettysburg, Pa., for duty with the machine gun battalion, from Fort Oglethorpe, Lieut. WILLIAM E. LEFFLER, Ashland.

To Harvard Medical School, Boston, Mass., for orthopedic instruction, Lieut. RANDALL ZIMMERMAN, Wilmerding.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieut. LOUIS H. MAYER, JR., Johnstown.

To Pine Camp, New York, for duty with the 15th Field Artillery, from Fort Oglethorpe, Lieut. ELMER HESS, Erie.

To Pittsburgh, Pa., for a course of instruction in military roentgenology, Lieut. CHARLES H. POOLE, Ruffsdale.

To San Antonio, Texas, Kelly Field, for duty, Lieuts. RAY N. LEWIS, Apollo; HENRI SCHMID, Pittsburgh.

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examinations, from Plattsburg Barracks, N. Y., Capt. ALBERT P. FRANCINE, Philadelphia.

To Washington University, St. Louis, Mo., for three weeks' intensive training and on completion of this course to return to his home and to the inactive list of the Medical Reserve Corps, Capt. THOMAS C. STELLWAGON, JR., Philadelphia.

To inactive list of the Medical Reserve Corps, from Fort Ethan Allen, Vt., Major JACK G. GITTINGS, Philadelphia.

Philippine Islands

To Manila, P. I., Philippine Dept. for duty, Major HENRY PICK, Manila.

Rhode Island

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieut. PATRICK J. MANNING, Wickford.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Benjamin Harrison, Lieuts. WILLIAM P. BERNARD, Central Falls; FRANCIS E. CROGHAN, Providence.

South Carolina

To Camp Lee, Petersburg, Va., for temporary duty, Lieut. WILLIAM E. LESTER, Lake View.

To New York, for orthopedic instruction, from Army Medical School, Lieut. KARL L. ABLE, Leesville.

To San Antonio, Texas, Kelly Field, for duty, Lieut. WILLIAM S. McMURRAY, Lockhart.

Honorably discharged from the Medical Reserve Corps of the Army, Major FRANCIS L. PARKER, Charleston.

South Dakota

To Fort Riley, for duty in the surgical service, Lieut. LINDSAY Z. FLETCHER, Montrose.

Tennessee

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. DAVID T. AUSTIN, Bogota.

To Camp McClellan, Anniston, Ala., for temporary duty, Lieut. THOMAS M. HARPER, Medina.

To Camp Pike, Little Rock, Ark., for temporary duty, Capt. WILLIAM E. HOWELL, Morristown.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. ROBERT B. GRIFFIN, Ridgley.

To Cornell Medical College, New York, for a course of instruction in military roentgenology, from Medical Officers' Training Camp, Fort Benjamin Harrison, Lieut. THOMAS O. MENEES, Nashville.

To Fort Oglethorpe for instruction, Lieut. WILLIAM C. COLBERT, Memphis.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Capt. WILLIAM H. SMITH, Brunswick.

To San Antonio, Texas, Kelly Field, for duty, Lieut. CHARLES HENDLEY, Cottagegrove.

Honorably discharged from the Medical Reserve Corps of the Army on account of being physically disqualified for active service, from Fort Oglethorpe, Lieut. SNETHEN B. DUGGAN, Eagleville.

Texas

To Atlanta, Ga., for duty in hospital laboratory, Lieut. GEORGE C. BRUNNELL, El Paso.

To Camp Dodge, Des Moines, Iowa, for temporary duty, Lieut. JOHN E. WILSON, Shiro.

To Camp Grant, Rockford, Ill., for duty as chief of the surgical service, from Medical Officers' Training Camp, Fort Oglethorpe, Capt. JOHN W. LANE, Houston Heights.

To Camp McClellan, Anniston, Ala., for duty, from Manila, Philippine Islands, Lieut. RUFUS H. HAGOOD, JR., Texas City.

To New York, for orthopedic work, Lieut. QUINCY B. LEE, Wichita Falls.

To report by telegraph to the commanding general, Southern Dept., for assignment to duty, Lieuts. DIMETRUS J. LOUIS, El Paso; THOMAS D. VAUGHAN, Taylor; LYTTON C. AMENT, Victoria; JOHN B. BAUGUSS, Whitewright.

To Washington, D. C., for duty in the office of the Surgeon-General of the Army, from duty at Camp Travis, Fort Sam Houston, Texas, Lieut. CLAUDE C. CODY, JR., Houston.

Utah

To Linda Vista, Calif., for temporary duty, Lieut. ONTIE HOVENDEN, Salt Lake City.

Vermont

To Camp Custer, Battle Creek, Mich., for duty, from Fort Benjamin Harrison, Lieut. GEORGE E. LATOUR, Burlington.

To Canal Zone, and report in person to the Governor of the Panama Canal, Balboa Heights, for assignment to duty, Capt. GEORGE C. MARSHALL, Rutland.

Virginia

To Camp Sheridan, Montgomery, Ala., base hospital for duty in the surgical service, Lieut. HERBERT W. ROGERS, Nassawadox.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM S. WILEY, Bristol.

To Fort Oglethorpe, for instruction, Capt. WILSON E. DRIVER, Norfolk.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieuts. JOSEPH F. GEISINGER, ALVAH L. HERRING, FRANK H. REDWOOD, Richmond.

To Newport News, Norfolk, Petersburg, Richmond, Alexandria, Washington, Winchester, Harrisonburg, Staunton, Charlottesville, Lynchburg, Roanoke, Pulaski, Bristol, Lynchburg, Danville, South Boston, Richmond, Roanoke, for the purpose of examining applicants for appointment in the Medical Reserve Corps of the Army and upon completion of this duty to return to their proper station, Major JOHN G. NELSON, Lieut. JOSEPH T. McKINNEY, Richmond.

To Richmond Medical College, Richmond, Va., for a course of instruction in military roentgenology, Lieut. JAMES N. WILLIAMS, Clifton Forge.

Washington

To Army Medical School, Washington, D. C., for preparation for nutritional survey, Lieuts. ROLLA B. HILL, Colfax, for instruction, JOSEPH R. TURNER, Tacoma.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, from Army Medical School, Capt. AUSTIN U. SIMPSON, Seattle.

West Virginia

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. CLERMONT E. PARK, Parkersburg.

To Macon, Ga., and report in person to the commanding officer Remount Dept., for duty, Lieut. JOSEPH K. COWHERD, Ridgeley.

Wisconsin

To Camp Hancock, Augusta, Ga., for duty as member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. ADELOR E. GENDRON, River Falls.

To County Hospital, Chicago, Ill., for instruction in military roentgenology, Lieut. MAXIMILIAN W. MOELLER, Milwaukee.

To Neurological School, University of Pennsylvania, Philadelphia, for intensive training in brain surgery, Lieut. ORVILLE R. LILLIE, Milwaukee.

ORDERS TO CONTRACT SURGEONS

Arkansas

To Camp Sheridan, Montgomery, Ala., for the purpose of conducting examinations in his specialty, and upon completion of this duty to return to his home, Dr. WILLIAM E. HUGHES, Pocahontas.

California

To Walter Reed General Hospital, Washington, D. C., for instruction in tuberculosis examination, Dr. FREDERICK A. BROWN, Hayward.

Colorado

To Camp Doniphan, Fort Sill, Okla., for duty as a member of the tuberculosis examining board, Dr. J. W. CRAIGHEAD, Denver.

Connecticut

To Camp Dix, Wrightstown, N. J., for duty as member of tuberculosis examining board, Dr. JOSEPH WALSH, New Britain.

To Camp Greene, Charlotte, N. C., for duty as a member of medical officers for the examination for tuberculosis, from Walter Reed General Hospital, Dr. GEORGE H. JENNINGS, Jewett City.

To Camp Wadsworth, Spartanburg, S. C., from Walter Reed General Hospital, Takoma Park, D. C., for duty as a member of the tuberculosis examining board, Dr. HUGH F. KEATING, New Haven.

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examinations, Drs. WILLIAM H. GRAY, Mystic; PATRICK J. CASSIDY, Norwich.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Dr. PERCY HICKLING, Washington.

Illinois

To Camp Sevier, Greenville, S. C., for duty as member of the tuberculosis examining board, Dr. JAMES S. RANKIN, De Kalb.

To Fort Benjamin Harrison for instruction in tuberculosis examination, Drs. WERNER E. EARLANDER, BENEDICT W. ROGERS, Chicago; CLARENCE N. McCUMBER, Lewiston.

Indiana

To Camp Sheridan, Montgomery, Ala., from Fort Benjamin Harrison, for duty as member of tuberculosis examining board, Dr. CHARLES J. McINTYRE, Indianapolis.

To Fort Benjamin Harrison for instruction in tuberculosis examinations, Drs. H. E. WHITLEDGE, Evansville; STEVENS C. MARKLEY, Richmond.

Iowa

To Camp Logan, Houston, Tex., for the purpose of acting as a member of a board of medical officers for the special examination for tuberculosis, Dr. ROBERT E. CONNIFF, Sioux City.

To Fort Benjamin Harrison for instruction in tuberculosis examination, Dr. ANDREW L. BELT, Fort Dodge.

To Fort Dodge, Des Moines, Ia., 88th Division, as member of board of medical officers for examination for tuberculosis, Drs. WALTER L. BIERRING, ADDISON C. PAGE, E. B. WINNETT, Des Moines.

Louisiana

To Camp Beauregard, Alexandria, La., 38th Division, for duty as member of the tuberculosis examining board, Drs. LEON J. MANVILLE, Houma; L. O. CLARK, Lafayette; ROBERT W. O'DONNELL, THOMAS E. WRIGHT, Monroe; WALTER J. DURAL, A. L. LEVIN, New Orleans.

Maryland

To Phipps Clinic, Baltimore, Md., for duty as director in his specialty, Dr. ADOLF MEYER, Baltimore.

To their homes, Drs. EUGENE J. LEOPOLD, A. P. HERRING, Baltimore; J. P. WADE, Cantonsville.

Massachusetts

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examination, Drs. JOSEPH A. COGAN, Boston; L. T. NEWHALL, Brookfield.

Michigan

To Camp MacArthur, Waco, Tex., 32d Division, for the purpose of acting as a member of a board of medical officers to examine for tuberculosis, Dr. B. A. SHEPARD, Kalamazoo.

To Fort Benjamin Harrison, for instruction in tuberculosis examinations, Dr. E. B. PIERCE, Howell.

To State Psychopathic Hospital, Ann Arbor, Mich., for duty as specialist in nervous and mental diseases, Dr. ALBERT M. BARRETT, Ann Arbor.

Minnesota

To Des Moines, Ia., Camp Dodge, for duty as member of board of medical officers for tuberculosis examination, from Fort Snelling, Minn., Drs. WALTER J. MARCLAY, HARRY R. NORDLEY, Minneapolis.

To Camp Lewis, American Lake, Wash., for purpose of examining in his specialty and upon completion of this duty to return to his home, Dr. RALPH E. MORRIS, Minneapolis.

To Camp Logan, Houston, Tex., for duty as a member of the tuberculosis examining board from Fort Snelling, Dr. ROBINSON BOSWORTH, St. Paul.

To Fort Snelling, Minn., as roentgenologist, Dr. CHARLES A. DONALDSON, Minneapolis.

Missouri

To Fort Benjamin Harrison for instruction in tuberculosis examination, Dr. L. T. HALL, Potosi.

To his home from duty at Fort Worth, Tex., Dr. PHILIP COGAN, St. Louis.

New Jersey

To Camp Dix, Wrightstown, N. J., for duty as member of tuberculosis examining board, Dr. MARCUS W. NEWCOMB, Brown Mills.

New Mexico

To Fort Bayard, N. M., Army General Hospital for duty, Dr. H. W. BREWER, Columbus.

To his home from duty at Camp Cody, Dr. E. D. McKINLEY, Alamorordo.

New York

To Camp Sevier, Greenville, S. C., for duty as member of board of medical officers for tuberculosis examinations, Drs. FRANK F. FINNEY, Burke; LEONARD P. SPRAGUE, Chateaugary.

To Camp Upton, Yaphank, L. I., for the purpose of conducting examinations in his specialty, from Camp Mills, L. I., Drs. GLENTWORTH R. BUTLER, TASKER HOWARD, Brooklyn.

To Camp Wadsworth, Spartanburg, S. C., for duty as a member of the tuberculosis examining board, from Walter Reed General Hospital, Dr. PERCIVAL F. DALPHIN, Malone.

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examination, Drs. HOWARD VAN RENSSELAER, Albany; ALFRED G. WILDING, Malone.

To Washington, D. C., for duty on the Advisory Committee on Venereal Diseases, Dr. GROVER W. WENDE, Buffalo.

To their homes, Drs. T. STUART HART, GEORGE H. KIRBY, ROBERT BURLINGTON, New York City.

North Carolina

To Camp Greene, Charlotte, N. C., from Fort Oglethorpe for duty as member of board of medical officers for special examination for tuberculosis, Dr. F. B. SPENCER, Salisbury.

Ohio

To Fort Benjamin Harrison, for instruction in tuberculosis examination, Dr. E. C. DAVIS, Cleveland.

Oklahoma

To Fort Reno, Okla., for duty, Dr. W. R. MILLER, Calumet.

Oregon

To Camp Lewis, American Lake, Wash., for duty as a member of a board of medical officers for tuberculosis examination, Drs. BRICE R. WALLACE, Albany; GUY L. BOYDEN, Pendleton; C. D. BODINE, NOBLE W. JONES, RAY W. MATSON, RICHARD WELLINGTON, Portland.

Pennsylvania

To Camp Dix, Wrightstown, N. J., for duty as members of tuberculosis examining board, Drs. ALIX H. DAVISSON, J. CLINTON FOLTZ, ELMER H. FUNK, MOSES JACOB, ISADORE KAUFMAN, H. R. M. LANDIS, ROBERT S. McCOMBS, CHARLES M. MONTGOMERY, J. J. ROBRECHT, CLARENCE D. SMITH, Philadelphia.

Camp McClellan, Anniston, Ala., for the purpose of conducting examinations in his specialty and upon completion of this duty to return to his home, Dr. THOMAS C. SIMONTON, Pittsburgh.

To Camp Sevier, Greenville, S. C., for duty as member of the tuberculosis examining board, Dr. G. FRANKLIN BELL, Williamsport.

To Fort Benjamin Harrison, for instruction in tuberculosis examination, Drs. H. J. HARTZ, E. S. VANDER-SLICE, Philadelphia.

To Walter Reed General Hospital, Takoma Park, D. C., Drs. JOHN W. ELLENBERGER, Harrisburg; JACOB ROSENBLOOM, Pittsburgh.

To his home and report by wire to Surgeon-General of the Army upon his arrival, from Camp Wadsworth, Spartanburg, S. C., Dr. WILLIAM C. WALLACE, Ingram.

Rhode Island

To Camp Hancock, Augusta, Ga., from Walter Reed General Hospital, Takoma Park, D. C., for duty as a member of the tuberculosis examining board, Dr. JAY PERKINS, Providence.

Tennessee

To Fort Benjamin Harrison for instruction in tuberculosis examination, Dr. H. P. COILE, Knoxville.

To his home from duty with the Tennessee National Guard, Dr. J. J. NEELY, Memphis.

Texas

To his home from duty at Leon Springs, Tex., Dr. ROBERT G. McCORKLE, San Antonio.

Virginia

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examination, Dr. FRANK G. SIMMONS, Richmond.

Washington

To Camp Lewis, American Lake, Wash., for duty as member of tuberculosis examining board, Drs. E. R. AHLMAN, Hoquiam; A. B. McLEAN, Pe Ell.

Wisconsin

To Camp MacArthur, Waco, Tex., 32d Division, for duty as member of tuberculosis examining board, from Camp Robinson, Sparta, Wis., Drs. W. B. FORD, J. D. MADISON, L. G. SYKES, J. G. TAYLOR, Milwaukee.

To Camp Sheridan, Montgomery, Ala., for duty as member of tuberculosis examining board, Dr. THOMAS MILLER, Oconomowoc.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

New Members of Board of Examiners.—Dr. Coit Hughes, Phoenix, has been appointed a member of the State Board of Medical Examiners to succeed Dr. Ira E. Huffman, Tucson; Dr. Albert L. Gustetter, Nogales, to succeed Charles T. Sturgeon, Globe, and David L. Conner, Phoenix, to succeed Dr. George W. Martin, Tucson.

Personal.—Dr. Franklin C. Norman, Hayden, has been appointed superintendent of the State Hospital for the Insane, Phoenix, succeeding Dr. John R. Walls, Tucson, resigned. ——Dr. J. Bernard Nelson, Mesa, has been appointed superintendent of public health of the state, succeeding Dr. Robert N. Looney, Prescott.——Dr. Allen H. Williams has succeeded the late Dr. Harry J. James as medical director of St. Luke's Home for Tuberculosis, Phoenix. Dr. Marian Walker Williams, wife of Dr. Allen Williams, has been made assistant director.

ARKANSAS

Venereal Clinic.—A free clinic for venereal diseases has been opened in the Medical School of the University of Arkansas, Little Rock, by Drs. Sterling P. Bond, Claude C. Pierce, U. S. P. H. S., Augustus C. Shipp and Mr. H. H. Railey. The clinic is open each day from 12:30 to 2.

FLORIDA

Hospital Site.—Drs. J. Edward Smoak and Mack R. Winton have purchased, for $10,000, a site for a hospital, 32 by 110 feet, at Bravard and Grand Central avenues, Tampa.

Antituberculosis Campaign.—Plans for a general campaign throughout the state were discussed at the meeting of the executive committee of the Florida Antituberculosis Association, September 19. Dr. Carrol H. Frink, secretary of the association, presided.

Trachoma in Florida.—A number of cases of trachoma have appeared in Riverside and other sections of the state, and Dr. William H. Cox, Brooksville, state health officer, has requested the Surgeon-General of the United States Public Health Service to detail an officer to aid in combating the disease. Dr. John McMullen, U. S. P. H. S., has been detailed to this duty.

ILLINOIS

Diphtheria in Edwardsville.—Dr. John J. McShane of the state board of health is investigating conditions in Edwardsville where twenty-five cases of diphtheria have occurred, with one death.

To Aid Tuberculosis Work in France.—Miss Elizabeth Wallace left Chicago, October 15, for France as a member of the Tuberculosis Commission headed by Dr. Livingston Farrand, president of the University of Colorado, and secretary of the National Association for the Study and Prevention of Tuberculosis.

Personal.—Dr. Frank Billings arrived in Chicago, October 19, after several months spent in Russia as chairman of the American Red Cross Commission.——The wife of Dr. H. Wernicke Gentles, Chicago, disappeared from her home, October 20, while suffering from melancholia, and her body was found in Lake Michigan the next day.——Dr. James A. Day, Jacksonville, announces his removal to Springfield.

Tuberculosis Clinics.—Two special clinics were given, October 12 and 13, at the Chicago Municipal Tuberculosis Sanatorium by Dr. H. Kennon Dunham, Cincinnati, who spoke on "The Interpretation of Roentgen-Ray Photographs of the Lungs in Tuberculosis," and by Dr. William Snow Miller of the University of Wisconsin, Madison, who spoke on "The Anatomy of the Lungs." The clinics were attended by present and former members of the staff of the sanatorium and its dispensary, and by the class of the Chicago School of Military Roentgenology.

Chicago

Canadian Surgeon-General to Address Institute of Medicine.—Surgeon-General Fotheringham of the Canadian Army will address the Institute of Medicine of Chicago on Friday,

Nov. 2, 1917, in the LaSalle Hotel, at 8 p. m. Surgeon-General Fotheringham went to France in 1914, with the first Canadian contingent, and was in active service in France with the Canadian forces until April of this year, when he was promoted to the Department of Militia and Defense, Ottawa, as Surgeon-General of Canada.

The subject of his address will be "Modern Methods in War from a Medical Standpoint."

IOWA

Personal.—Dr. Arthur A. Schmidt, Postville, while driving his automobile over a grade crossing near Postville, was struck by a train. The automobile was destroyed, and Dr. Schmidt sustained a broken arm, fracture of the nose and internal injuries.

MARYLAND

Personal.—Dr. Archibald C. Harrison, Baltimore, director of the University of Maryland Base Hospital Unit, was operated on at St. Joseph's Hospital, October 7, for disease of the abdomen and is reported to be doing well.——Dr. George M. Fischer, Spring Gap, has been appointed justice of peace for Allegany County.

New Tuberculosis Hospitals Proposed.—Dr. John D. Blake, health commissioner of Baltimore, in a recent report of the heads of the department, mentioned the great number of deaths due to tuberculosis among the negroes in Baltimore, and attributed this to the fact that there is no hospital at which they can be treated, and they are carrying the disease into the homes of the white people. Mayor Preston stated that he contemplated building two hospitals in the near future, one for whites and another for colored persons.

Meetings.—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland will be held on October 31 at Havre de Grace. Dr. Purnell F. Sappington, Bel Air, president of the Harford County Medical Society, will deliver the address of welcome. Dr. Guy Steele, president of the Medical and Chirurgical Faculty, will speak on "Pellagra in Maryland." Dr. Herbert Harlan of Baltimore will read a paper on "Proposed Changes in the Medical Practice Act," and Dr. Arthur P. Herring, secretary of the state lunacy commission, will address the meeting on "Psychiatric Problems of the War."

Hospital rates Increased.—Representatives from all the hospitals in Baltimore appeared before the board of estimates recently and showed that it is impossible to treat city patients sent to the hospitals by supervisors of city charities at the existing rate of 62½ cents a patient per day, because of the high cost of food, medicine, gauze and coal. The city was asked to pay the hospitals next year $1.75 a patient a day. Dr. Charles O'Donovan, who represented St. Joseph's Hospital, said that it cost that hospital to maintain and treat a patient sent by the city $1.55½ a day. St. Joseph's from Oct. 1, 1916, to Oct. 1, 1917, has spent on city patients $56,000, and 1,723 patients were sent to the hospital by the city authorities for treatment during that time. Dr. Alexius McGlannan, who represented St. Agnes' and Mercy hospitals, stated that it costs those hospitals $1.50 a day to maintain and treat a patient. Dr. Randolph Winslow of the Maryland General Hospital placed the cost of city patients in that hospital from $1.50 to $1.60 a day. Similar statements were made by Dr. G. Milton Linthicum of the University Hospital; Dr. Smith of Mercy Hospital, and Dr. Albert T. Chambers of the Franklin Square Hospital. Dr. Linthicum pointed out to the board that the city officials should take good care of the hospitals so that the poor patients sent for treatment might be given proper care. It was hinted by all the physicians present that unless the city pays more money for the poor patients sent for treatment, the work will have to be curtailed or stopped altogether.

MINNESOTA

Diphtheria at State Hospital.—The epidemic of diphtheria which began about July 15, at the State Hospital for the Insane, Rochester, has now subsided. There were about 250 cases, with no deaths.

Southern Minnesota Physicians to Meet.—The annual meeting of the Southern Minnesota Physicians' Association will be held at Mankato, November 26 and 27, under the presidency of Dr. Aaron F. Schmitt, Mankato.

Good Work at Sanatorium.—The state board of control received a report from the State Sanatorium for Tuberculosis, Owatonna, which says that thirty-five patients had been discharged, cured, from the institution during September. Of these, thirty have gained an average of 40½ pounds during their stay at the institution.

Personal.—Prof. C. C. Palmer of the College of Agriculture of the State University has been appointed head of the department of bacteriology, physiology and hygiene, at the Delaware College, Newark, Del.——Dr. Frederick M. Allen of the Rockefeller Institution, New York, delivered an address for the University of Minnesota Medical Society at Minneapolis, October 8, on "Diabetes."——Dr. Charles E. Smith has resigned as medical inspector in the St. Paul Health Department, to accept a position with the state department of health. ——Dr. Harry G. Irvine, Minneapolis, has been appointed director of the State Bureau of Venereal Diseases of California.

New State Officers.—At the annual meeting of the Minnesota State Medical Association, held in St. Paul, October 10-12, under the presidency of Dr. Harper M. Workman, Tracy, the following officers were elected: president, Dr. Arthur J. Gillette, St. Paul; vice presidents, Drs. Ora C. Strickler, New Ulm; Edward H. Frost, Willmar, and Matthew J. Lynch, Minneapolis; secretary, Dr. Thomas S. McDavitt, St. Paul (reelected); treasurer, Dr. Earle R. Hare, Minneapolis; councillor, for the sixth district, Dr. Frank R. Weiser, Windom, and for the eighth district, Dr. Hugh F. McGaughey, Winona; delegate to the American Medical Association, Dr. George D. Head, Minneapolis, and alternate, Dr. John W. Ball, Minneapolis. Resolutions were adopted by the association urging the establishment of a safety zone around Fort Snelling, and the enactment of laws for the control of venereal diseases by the state board of health.

MISSOURI

Personal.—Dr. Wilson J. Ferguson, Sedalia, recently appointed a member of the state board of health, was elected vice president of the board, September 29.——Dr. Woodson Moss, Columbia, has retired from the faculty of the University of Missouri, after a service of forty-three years.

St. Louis

Emergency Unit Organized.—A medical unit of thirty physicians and surgeons has been organized by the St. Louis Medical Society to cooperate with the home guard regiments for service in case of emergencies, such as the recent race roits in East St. Louis, Ill.

Cleared of Disloyalty Charge.—The St. Louis Medical Society, at its meeting, September 23, exonerated Dr. R. Emmet Kane of a charge of disloyalty, made by several members of the auxiliary Medical Defense Committee, and extends an honorable vote of thanks to Dr. Kane for his "untiring and patriotic medical work since the war began."

Personal.—Dr. Charles W. Shery has been appointed city bacteriologist and pathologist, succeeding Dr. Frederick A. Baldwin, resigned.——Dr. George W. Flynn sustained severe cuts and bruises when a city ambulance collided with his automobile, October 5.——Dr. Aden C. Vickrey was found unconscious beside his automobile, September 22, with a fracture of the base of the skull, and is under treatment in the Alexian Brothers Hospital.

Registration Subcommittee Appointed.—The Auxiliary Medical Defense Committee of St. Louis has appointed a subcommittee for the registration of medical practice, consisting of Drs. Willard Bartlett, N. M. Freund and G. A. Jordan. The committee has formulated plans to insure that competent physicians will take case of the practice of any medical men volunteering for Army and Navy service with the provision that from one third to one half of any fees collected should be turned over to the family, or deposited to the physician's credit.

MONTANA

Hygienic Laboratory Opened.—The hygienic laboratory of the state board of health at the state capitol, Helena, was opened, October 15, under the charge of Dr. Arthur H. McCray.

State Board Election.—At the October meeting of the State Board of Medical Examiners in Helena, Dr. Sidney A. Cooney, Helena, took his seat as a member of the board, and was elected secretary, succeeding Dr. William C. Riddell, resigned. Dr. Patrick H. McCarthy, Butte, was elected president.

Hospital News.—Work will be commenced soon on the new Deaconess Hospital, Billings. The necessary fund of $10,000 has been oversubscribed, and a 10-acre site has been secured between Lewiston and Alderson avenues; the contract has been awarded.——An addition has been made to the Park Hospital, Livingston, at a cost of $20,000. This addition increases the capacity of the hospital by twenty rooms, and will accommodate fifty patients.

NEW MEXICO

Personal.—Dr. Miguel F. Des Marais, superintendent of the New Mexico Hospital for the Insane, East Las Vegas, has resigned.——Dr. Samuel H. Eckles, Miami, Ariz., has succeeded Dr. Edward W. Hooper, Silver City, resigned, as physician of Grant County. Dr. Eckles has been ordered to report for duty in New York City, November 15, and expects to be sent abroad.——Dr. LeRoy S. Peters has disposed of his interest in the Albuquerque Sanatorium, and has been appointed associate medical director of St. Joseph's Sanatorium, Albuquerque.

State Society Meeting.—The annual meeting of the New Mexico Medical Society was held at Las Cruces the first week in October, and the following officers were elected: president, Dr. John W. Kinsinger, Roswell; president elect, Dr. Charles A. Frank, Albuquerque; vice presidents, Drs. Hugh V. Fall, Roswell; Chester Russell, Artesia, and Howard M. Cornell, Las Cruces; secretary, Dr. Robert E. McBride, Las Cruces; treasurer, Dr. Frank E. Tull, Albuquerque; delegate to the American Medical Association, Dr. Harry A. Miller, Clovis; alternate, Dr. Robert E. McBride, Las Cruces, and councillors, first district, Dr. Robert L. Bradley, Roswell; second district, Dr. Harry A. Miller, Clovis; third district, Dr. Walter E. Kaser, Las Vegas; fourth district, Dr. Charles H. Churchill, Madrid; fifth district, Dr. George S. McLandress, Albuquerque, and sixth district, Dr. Troy C. Sexton, Las Cruces. Albuquerque was selected as the next place of meeting.

NEW YORK

Centennial of Medical Society.—The one hundredth anniversary of the Steuben County Medical Society was celebrated at Bath, October 16. The presidential address on "Our Centennial Anniversary," was delivered by Dr. Henry J. Wynkoop, Bath.

District Society Meetings.—The Sixth District Branch of the Medical Society of the State of New York held its eleventh annual meeting at Glenn Springs, October 9, and elected the following officers: president, Dr. R. Paul Higgins, Cortland; vice presidents, Drs. John M. Quirk, Montour Falls, and Leon M. Kysor, Hornell; secretary, Dr. Charles H. Gallagher, Ithaca, and treasurer, Dr. Stuart B. Blakely, Binghamton.——At the eleventh annual meeting of the Seventh District Branch of the Medical Society of the State of New York, held in Canandaigua, September 27, Dr. John Pratt, Manchester, was elected president; Drs. J. Polk Delaney, Geneva, and Festus M. Chaffee, Middlesex, were elected vice presidents; Dr. John F. Myers, Sodus, was elected secretary, and Dr. Alfred W. Armstrong, Canandaigua, treasurer.

New Adjustment of Medical Claims Under Compensation Act.—The State Industrial Commission has issued a statement announcing changes in procedure on claims for medical compensation to injured employees. Hereafter all claims for medical services must be made direct to the commission, which will pass upon the claims, make awards covering medical services in amounts that may be deemed reasonable, and issue an order directing payment which, if not obeyed, may be filed in the county clerk's office and become a judgment of the Supreme Court. This change has been made as the result of a recent decision of Justice Benedict in the Appellate Division of the Supreme Court, which has established in effect that no action can be maintained in the courts for medical services, but that the matter must be determined by the commission, which establishes both the reasonableness of the amount and the location of the liability. If the employee provides his own medical attention he will be obliged to meet the expense, and the doctor may have a lien on the compensation to be paid.

New York City

Case of Anthrax at Bellevue.—A victim of anthrax died recently in Bellevue Hospital. This was the sixth case of anthrax which has been cared for at Bellevue within a brief period. Among the six cases there was one recovery.

Harvey Lecture.—The first lecture of the Harvey Society series delivered at the New York Academy of Medicine, October 27, by Prof. W. T. Porter of Harvard University, took up the question of "Shock; Observations at the Front."

New Brooklyn Hospital.—The cornerstone of the new hospital building which is to replace the Cumberland Street Hospital was laid on the afternoon of October 18, by Mayor Mitchell and Comptroller Prendergast. The new structure is to cost $800,000, and the contract calls for its completion within a year.

Lectures on Skin Diseases.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley, assisted by the attending staff, will give the nineteenth series of clinical lectures on diseases of the skin in the outpatient hall of the hospital on Wednesday afternoons, beginning November 7, at 4:15 o'clock.

Anniversary Dinner of Pharmacy College.—The Brooklyn College of Pharmacy will celebrate its twenty-fifth anniversary by a dinner to be given at the Elk's Club, Brooklyn, November 21. The dinner is in honor of two members of the faculty, Profs. D. C. Mangan and H. D. Schimpf, who have completed twenty-five years of continuous service.

Ambulance Wrecked by Trolley.—As the result of a collision with a trolley car at Forty-Sixth Street and Fifth Avenue, Brooklyn, on October 14, a Norwegian Hospital ambulance was wrecked. The ambulance surgeon, Dr. John M. Tamraz, and the driver sustained minor injuries. No patient was in the ambulance at the time of the accident.

Psychiatric Changes.—On October 1, the State Hospital Commission appointed Dr. Kirby, formerly director of clinical psychiatry at the Manhattan State Hospital and recently medical inspector of the New York state hospitals, director of the Psychiatric Institute, Ward's Island. Dr. Kirby has also been appointed professor of psychiatry at the Cornell University Medical College, succeeding Dr. August Hoch, who has resigned and will remove to California.

Free Clinic for Speech Defects.—Financed by public-spirited citizens of New York, a New York Clinic for Speech Defects has been incorporated, with Dr. Herbert L. Wheeler as president. The clinic will be open this month, under the medical direction of Dr. James Sonnett Greene, and among the members of the consulting board are Drs. Abraham Jacobi, John MacKenty, Phillip D. Kerrison and George M. Parker. In addition to the task of restoring the former powers of speech to soldiers rendered mute by shellshot, the board will develop the treatment of inherited or acquired speech defects.

Hospitals Face Large Deficit.—According to the report of the United Hospital Fund for the fiscal year ending September 30, forty-six of the large hospitals that share in this fund are facing a deficit that will total over $1,000,000. Estimates compiled by the fund show that in 1917 the expenses of these forty-six prominent hospitals were $6,862,359, and their total income only $6,371,832, leaving a deficit of over $490,000. For the year just ended there was a further deficit of $700,000, and several of the large hospitals have not yet sent in full returns but state that their deficits are the largest in their history. The New York Hospital has reported a deficit of $96,812; the German Hospital, $52,724; the Volunteer, $40,377; the Nursery and Child, $60,539; Polyclinic, $21,430; Lying-In, $19,416.

Medical Experiences at Camp Upton.—The Base Hospital, Seventy-Seventh Division, National Army, Camp Upton, Long Island, furnished the program of the Section on Medicine of the New York Academy of Medicine at the regular meeting of October 16. The program included a description of the complicated administration of an army base hospital by Major J. D. Whitham. A paper on the "First Psychiatric Experiences in the National Army" was read by Dr. Aaron J. Rosanoff which brought out the fact that the examination of recruits has shown a much larger number of individuals with psychopathic conditions than has been hitherto recognized, and that many such cases that might pass under a doctor's care in civil life without their mental condition being diagnosed were sifted out by the routine examinations and longer periods of observation in vogue in the Army. Dr. Abraham Zingher gave a talk on the "Schick Reaction in Recruits of the National Army," in which he stated that out of several thousand men subjected to the Schick test 85 per cent. were found immune to diphtheria. The application of the Schick test would leave only about 15 per cent. of the troops to be watched for diphtheria, would materially assist in making a diagnosis of diphtheria in doubtful cases, and would result in a great saving of diphtheria antitoxin. Dr. Russell L. Cecil spoke on the "Reactions Produced by Prophylactic Inoculation with the So-Called Triple Typhoid Vaccine." In his experience only an average of one man in every 1,000 inoculated suffered from a reaction sufficiently severe to

send him to the hospital, and even then his stay in the hospital was very short, frequently only twenty-four hours. He found the reactions from the use of the triple vaccines no more frequent or severe than those from the typhoid vaccine alone.

PENNSYLVANIA

Philadelphia

Veterinarians Mobilize.—Dr. Clarence J. Marshall, state veterinarian and professor of veterinary medicine at the University of Pennsylvania, has gone to Washington to supervise the mobilization of the government's veterinary service. There are 12,000 experts and enlisted men in force.

Jefferson Unit in New Quarters.—The Jefferson Base Hospital Unit No. 38, under Major John S. Lambie, has entered new quarters at the Second Regiment Armory. Here Major William M. L. Coplin and Capt. Frank H. Hustead have their offices. The 152 men of the personnel of the unit will receive hospital training in the city institutions, and learn cooking in the hotels.

Medical Club Nominations.—At the meeting of the Medical Club of Philadelphia, October 19, the following nominations were made: president, Drs. Albert P. Brubaker and William D. Robinson; first vice president, Dr. G. Oram Ring; second vice president, Dr. Alexander McAllister; secretary, Dr. William S. Wray; treasurer, Dr. Lewis H. Adler, Jr., and governor, Dr. McCluney Radcliffe.

Hospital Opens New Office.—The Pennsylvania Committee (Medical Section) of the Council of National Defense has opened its office in City Hall. An information bureau has been established with a view to supplying institutional vacancies as they may occur with medical men, in the capacity either of interns or of visiting physicians. Vacancies in private practice will also be filled whenever possible.

Personals.—Dr. D. Randall MacCarroll has been elected to fill the vacancy on the obstetric staff of the Maternity Hospital caused by the resignation of Dr. Charles C. Norris.——Major S. MacCuen Smith has been relieved from active duty at Camp Meade, and has returned to Philadelphia.——Dr. D. Gregg Metheny has returned to Philadelphia from Newport, R. I., where he has been in the service of the United States Navy. Dr. Metheny has been temporarily detached from active service in order to resume his duties at the Jefferson Medical College.——Dr. Frank C. Hammond, who is connected with the Samaritan Hospital, has been appointed a member of the board of health, to serve during the absence in France of Dr. Alexander C. Abbott, who entered the Army Medical Corps several months ago.——Dr. Hubley R. Owen, chief of police surgeons, who enlisted as first lieutenant in the Jefferson Hospital unit, which will leave for France, the early part of 1918, was granted an indefinite leave of absence. No successor has been chosen for Dr. Owen.——Dr. Clement A. Fogerty, who left for England early in August, has been promoted to the position of assistant surgeon in the Southwark Hospital, London.——Dr. Mary Ridegway, who was severely burned when a lamp exploded and threw burning oil on her face and arms, is in a serious condition.

VERMONT

Bennington County Physicians Elect Officers.—At the annual meeting of the Bennington County Medical Society, held at Manchester Center, Dr. John I. Cochran, East Dorset, was elected president; Dr. James L. Lovejoy, Manchester Depot, vice president, and Dr. L. H. Ross, Bennington, secretary-treasurer. At this meeting Dr. Schuyler W. Hammond of Rutland discussed the "Allen Treatment for Diabetes Mellitus."

New State Officers.—The Vermont State Medical Society held its one hundred and fourth annual meeting in Barre, October 11 and 12, under the presidency of Dr. Clarence H. Beecher, Burlington, and elected the following officers: president, Dr. Clayton W. Bartlett, Bennington; vice president, Dr. William Lindsay, Montpelier; secretary, Dr. William G. Ricker, St. Johnsbury (reelected); treasurer, Dr. Edward H. Martin, Middlebury; auditor, Dr. Waldo J. Upton, St. Albans, and councilor for first district, Dr. James N. Jenne, Burlington, and for the second district, Dr. Frank E. Farmer, St. Johnsbury. Burlington was selected as the next place of meeting.

TEXAS

Quarantine Station.—A committee representing Beaumont, Port Arthur and Sabine has gone to Austin to endeavor to secure an additional appropriation of $15,000 from the legislature for the construction of the proposed state quarantine station at Sabine.

Personal.—Dr. Albert H. Braden, Beaumont, has been appointed chief director for the International Board of the Rockefeller Foundation, and will be in charge of the health and sanitary survey to be conducted throughout the state.——Dr. William E. Howard, Dallas, has been elected surgeon of the United Spanish War Veterans.

New Officers.—At the semiannual meeting of the South Texas District Medical Association, held in Beaumont, October 12, Dr. James E. Thompson, Galveston, was elected president; Dr. Wil T. Williams, Beaumont, vice president, and Dr. Albert H. Braden, Beaumont, secretary-treasurer. Houston was selected as the next place of meeting.——At the annual meeting of the Dallas Association for the Study and Prevention of Tuberculosis, October 10, Dr. Robert B. McBride was elected president, and Dr. Raleigh W. Baird, vice president.——At the fifth annual meeting of the Texas Surgical Society, held in Houston, October 8 and 9, the following officers were elected: president, Dr. W. Burton Thorning; vice presidents, Drs. Frank Paschel, San Antonio, and Andrew B. Small, Dallas; secretary, Dr. Frank L. Binds, Houston; treasurer, Dr. J. B. Smoot, Dallas, and recorder, Dr. Judson L. Taylor, Houston. Waco was selected as the next place of meeting.

CANADA

Medical Officers Decorated.—The following Canadian Medical officers have been invested by King George with the military cross: Capts. Walter Lawson, Hugh Mustard and Frederick Pees.

Hospital News.—Major D. W. Whitton is appointed to command a hospital ship.——Lieut.-Col. E. J. Williams is appointed to command the Canadian hospital at Hastings, England, succeeding Lieut.-Col. Hugh E. Munroe.——The accommodation at Camp Hill Military Hospital, Halifax, N. S., is to be increased by the addition of two new wings. It will then have a capacity of 600 beds.——The Military Annex of the Vancouver General Hospital was formally opened, September 15. The buildings has accommodation for 300 patients, there being eight wards, each containing from thirty-four to forty beds.

Army Medical News.—Temporary Brig.-Gen. Auckland Campbell Geddes, M.D., Montreal, has had conferred on him the honor of Knight Commander of the Order of the Bath. Dr. Geddes is director of recruiting in England. Sir Auckland C. Geddes had occupied the chair of anatomy in McGill University a year when war broke out. He is a brother of Sir Erie Geddes, First Lord of the Admiralty.——The Military Cross has been awarded the following officers of the Canadian Army Medical Corps: Capts. Ronald Hugh Macdonald, Winnipeg; Robert James Manion, Fort William, Ont; Archibald McCausland, and Capt. Ashley C. Cooper Johnston, Lundbreck, Alberta.

Medical Boards in Ontario.—Nine medical boards will be stationed in the Province of Ontario. Of these, three will be located in London, one each in Windsor, Sarnia, Harriston, Guelph and Brantford, and there will be one traveling board. These boards will examine the drafted men, and a central board will be located at Ottawa to review the cases passed on by the local boards.——A second army medical board has been established in Windsor, Ont., composed of Captain Walsh, Guelph; Lieutenants Ross, London and Brisson, Tilbury. The first board is composed of Capts. W. Gallow, Goderich; G. Murray Flock, and Major W. A. Burgess, Windsor.

Personal.—Dr. William D. Brydone-Jack, Vancouver, B. C., has been appointed superintending engineer of the public works department for the provinces of Manitoba and Saskatchewan.——Dr. Arthur C. Nash, Vancouver, has been appointed resident physician and medical officer of health at Massett, Queen Charlotte Islands.——Major Andrew MacPhail, A. D. M. S., London, England, is returning to his home in Montreal. Dr. MacPhail has been overseas two and one-half years, and will be assigned to duty in Canada. He is editor of the *Canadian Medical Association Journal*. Major John S. Jenkins, Charlottetown, P. E. I., succeeds him.——Lieut.-Col. Henry R. Casgrain, Windsor, Ont., who has been in command of Bushey Park Red Cross Hospital, England, has been appointed to command the French-Canadian Hospital at St. Cloud, near Paris, France.

Lieutenant-Colonel Lebel, who was in command, will probably return to Canada. Lieutenant-Colonel McQueen, late of the Fifth Field Ambulance, will succeed Colonel Casgrain in command of Bushey Park.

GENERAL

Southern Gastro-Enterologists to Meet.—The next annual meeting of the Southern Gastro-Enterological Association will be held at Memphis, Tenn., November 12, under the presidency of Dr. James C. Johnson, Atlanta, Ga.

Tuberculosis Foes Elect Officers.—At the closing session of the fifth Mississippi Valley Conference on Tuberculosis, held in St. Paul, October 10, Dr. Alfred Henry, Indianapolis, was elected president; Dr. Walter J. Marcley, Minneapolis, vice president, and Mr. James Minnick, Chicago, was reelected secretary.

Anesthetists Elect Officers.—At the annual meeting of the Interstate Annual Meeting of Anesthetists, held in Toledo, Ohio, October 11, Dr. Elmer J. McKesson, Toledo, was elected president; Dr. John J. Buettner, Syracuse, N. Y., vice president, and Dr. F. Hoeffer McMechan, Avon Lake, Ohio, secretary-treasurer.

National Board Examination.—The third examination of the National Board of Medical Examiners was held in Chicago, October 10-18. Twenty-eight candidates were examined, of whom twenty-two passed. Arrangements have already been made for another examination, which will be held at the Bellevue Hospital, New York City, Jan. 9-17, 1918.

New Mississippi Valley Officers.—At the annual meeting of the Mississippi Valley Medical Association, held in Toledo, Ohio, October 9 to 11, Dr. Francis M. Pottenger, Monrovia, Calif., was elected president; Dr. Frank B. Wynn, Indianapolis, vice president; Dr. Henry Enos Tuley, Louisville, secretary (reelected); Dr. Samuel C. Stanton, Chicago, treasurer (reelected). Louisville, Ky., was selected as the next place of meeting.

Bequests and Donations.—The following bequests and donations have recently been announced:

Columbia University, Mt. Sinai Hospital, United Hebrew Charities, and Montefiore Home, each $5,000; Home for Aged and Infirm Hebrews, St. John's Guild and Society for Improving the Condition of the Poor, New York City, each $2,500 by the will of Isaac Newton Seligman.

Johns Hopkins University, Baltimore, and the Charity Organization of New York, each $100,000, and one half of the residuary legacies of four beneficiaries by the will of Jennie Gillender.

Red Cross First Aid Trip.—The Central Safety Committee of the Missouri Pacific Railway Company has arranged with the American Red Cross Society for the Red Cross First Aid Car No. 2 in which Dr. Eric S. Green, Washington, D. C., is to make a trip along its lines for the purpose of instructing employees and their families in first aid for the injured and the means of preventing accidents. Dr. Green will deliver lectures and make demonstrations. The trip began October 9, at St. Louis, and will end December 23, at Texarkana, Ark.

Southwestern Physicians Elect Officers.—The Medical Association of the Southwest held its annual meeting in Kansas City, October 15 to 17, under the presidency of Dr. Everett S. Lain, Oklahoma City, and elected the following officers: president, Dr. Edward H. Martin, Hot Springs, Ark.; vice presidents, Drs. C. Lester Hall, Kansas City, Mo.; James M. Bonham, Hobart, Okla.; Matthew M. Smith, Dallas, Texas, and Ernest F. Day, Arkansas City, Kan., and secretary, Dr. Fred H. Clark, El Reno, Okla. (reelected). The next meeting will be held in Dallas, Texas.

Prevention of Infant Mortality.—At the annual meeting of the American Association for the Prevention of Infant Mortality, held in Richmond, Va., October 15 to 17, under the presidency of Dr. William C. Woodward, Washington, D. C., the following officers were elected: president, Mrs. William Lowell Putnam, Boston; president-elect, Dr. Philip Van Ingen, New York City; vice presidents, Drs. Isaac A Abt, Chicago, and Watson S. Rankin, Raleigh, N. C.; secretary, Dr. Henry F. Helmholz, Chicago; treasurer Mrs. Austin McLanahan, Baltimore, and executive secretary, Miss Gertrude B. Knipp, Baltimore.

New Officers for Railway Surgeons' Association.—At the fourteenth annual meeting of the American Association of Railway Surgeons, held in Chicago, October 17 to 19, under the presidency of Dr. William B. Malone, Memphis, Tenn., the following officers were elected: president, Dr. Edwin S. McDonald, Cameron, Mo.; vice presidents, Drs. Jacob Hinden, Strong, Kan.; Francis L. Reder, St. Louis, and Robert McConaughy, York, Neb.; secretary, Dr. Louis J. Mitchell, Chicago (reelected for the twentieth year); treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa (reelected for the tenth year), and members of the executive board, Drs. Guy G. Dowdall, Chicago, and Joseph R. Hollowbush, Rock Island, Ill. Chicago was selected as the next place of meeting.

Hospital Standardization.—The most important event connected with the recent meeting of the American College of Surgeons and the Clinical Congress of Surgeons was the meeting devoted to hospital standardization. A large number of papers were presented covering the whole subject of hospitals, hospital standardization and the efficiency of hospital work, as well as, and more important, the control of operative procedures. As an outcome of the deliberations it was decided to make an inspection of the various hospitals in the early future, and a committee was appointed to report on the method of procedure. This committee was to report on Friday. It consisted of Dr. E. A. Codman, Boston; Dr. A. J. Ochsner, Chicago, and Mr. John G. Bowman, the director of the college. From the Carnegie Foundation a fund of $50,000 has been received with which to carry on this investigation. A complete report will appear in Society Proceedings next week.

FOREIGN

Peruvian Commission to the United States.—The Peruvian Medical Commission, which will tour the United States inspecting medical schools and hospitals, began its work in Baltimore, October 14, and from there went to Philadelphia and New York. The commission is composed of Prof. Dr. Guillermo Gastaneta and Drs. E. Campodonico and R. Asplazu. The object of the commission is to secure information for the reorganization of the medical schools of Peru after American standards.

Annual Meeting of the Internists of Italy.—It is announced that the twenty-sixth annual meeting of the Italian Societa di medicina interna is to be held during the latter part of October in some city near the firing line. The themes appointed for discussion are camp jaundice, malaria, soldier's heart, kidney disease and tuberculosis in their relations to the military service, and the sympathetic syndromes in soldiers. The secretary of the congress is Prof. A. Berti of Padua.

Deaths in the Profession Abroad.—R. Oppenheim, one of the editors of the *Progrès médical*, chief of an ambulance at Vichy, and author of numerous works on the suprarenals and shell shock, aged 43.——**A. Stahl,** at one time president of the Porto Rico Medical Association, and dean of the profession in Porto Rico, aged 79.——**R. del V. Rodriguez,** Porto Rico.——**F. Moser,** a prominent physician in Switzerland; on account of the absence on military duty of the other physicians in his vicinity, he disregarded pneumonia in himself to attend to urgent calls, aged 53.

Annual Meeting of the Porto Rico Medical Society.—This meeting is to be held at San Juan, Porto Rico, December 22 and 23. One evening is to be devoted to a public lecture on the care of infants. The president of the society is Dr. G. Villaronga of Ponce, and the secretary, Dr. A. R. Laugier of San Juan. The bulletin published in Spanish by the society is a fine monthly of about fifty or sixty pages. The leading article is on the hygiene of the home, the writer, Dr. Atiles, urging his medical hearers, among other points, to make every effort to combat certain superstitions still rife in Porto Rico, such as that cobwebs should never be disturbed or bad luck will follow.

LONDON LETTER

LONDON, Oct. 2, 1917.

The War

THE SHORTAGE OF MEDICAL STUDENTS

The effect of medical students' joining the army either as combatants or as members of the medical corps in the early part of the war has been described in THE JOURNAL. The position that has now been reached is well summarized in a memorandum submitted to the government by the committee of reference of the Royal Colleges of Physicians and Surgeons (a body appointed to deal with the problem of medical recruiting). The annual average wastage of physicians in normal times preceding the war owing to death, retirement from practice, or permanent incapacity was about 900. The average number of physicians added to the Medical Register annually was about 1,100. There is now a large abnormal

wastage in physicians arising directly out of the war. The supply of physicians to meet the needs of the civil population has been reduced to the lowest number consistent with safety, and there is practically no reserve to make good the normal annual wastage from deaths or incapacity. All new additions to the ranks of the medical profession by the qualification of students are at once requisitioned by the army and are not available, therefore, to make good the normal average wastage of physicians required for the civil population. The number of fifth-year men students due to qualify in 1917 (922) is only barely sufficient to make good the normal wastage in the profession of that year. The number of fourth-year men students due to qualify during 1918 was 1,078. This number has been reduced since these statistics were obtained, by some of the men's having accepted commissions as probationary surgeons in the navy, and the number who will actually qualify in 1918 is probably only just sufficient to meet the normal annual wastage, that is, about 900. The number of third-year men students due to qualify during 1919 is only 519, and if the greater number of these qualify in due course they will little more than meet half the normal wastage. There were 783 second-year men students due to qualify in 1920, and 1,432 first-year men students due to qualify in 1921. But since these figures were compiled, the situation has undergone considerable alteration because medical students who were rejected as not fit for general military service have been called up on the introduction of a series of grades of physical fitness under which men of inferior physique are accepted for military work of a kind suitable to them, and also because first-year students as they have reached the age of 18 have been called up. The number of first-year students due to qualify in 1921 is therefore probably at present not more than half the figure given above, and the number of second-year students is less, though probably not to quite the same extent. The average number of medical students registered in times preceding the war was about 1,800 a year. The shortage, therefore, of first, second and third-year students, as compared with normal times, is a reduction by about two thirds. In regard to probationer surgeons in the navy, the committee recommends that these (who for the most part are fourth or fifth-year men) should be demobilized after six months of service, for otherwise their qualification is being indefinitely postponed. In order to enable this to be done, it is necessary that a supply of junior students as they pass their second medical examination should be available, and some of these could become surgeon probationers, and thus make it possible to demobilize those who have served six months. The Central Medical War Committee therefore strongly recommends that medical students now serving in the navy or army as officers or privates should be demobilized to continue their studies, and further, that the calling up of more medical students that have completed their first year of study should cease.

AMERICAN MEDICAL OFFICERS IN ENGLAND

American Army surgeons continue to arrive in this country and take up duty in the military hospitals of London and the provinces as well as in France. There are now over 900 serving with the British forces in Great Britain and France. In addition, during the past year there has been a constant stream of American civilian physicians drafted into our hospitals. The arrangement has a double advantage. It relieves the drain on the civil medical profession in this country and it gives our American colleagues the opportunity of gaining experience of the wounds of modern warfare which, no doubt, they will later turn to account in treating their own soldiers.

The replacement of part-time and in some cases whole-time civilian physicians employed in military hospitals by American surgeons has given rise to some resentment in consequence of the curt manner in which the change was announced by the War Office. There is no question as to the American surgeons' being perfectly welcomed by their British colleagues as well as by the country at large. The British surgeons were simply given a week's notice that their services were no longer required by the War Office, and they were not even thanked, although many of them had made sacrifices in order to undertake the work. The War Office no doubt finds justification for the immediate employment of American surgeons by the fact that the Central Medical War Committee has informed it that no more physicians can be called up for the army without seriously endangering the supply for the treatment of the civil community. However, the replacement has taken place in districts in which there is no shortage of physicians. The mistake made by the War Office consisted in not consulting the professional committees as to the places where this could be done with the greatest advantage to the civil community. The tendency, of course, of military authorities everywhere is to give orders and not to try to satisfy or take into account the opinions of persons concerned.

CAMPAIGN AGAINST VENEREAL DISEASE

Considerable progress has been made with the organization of measures for the provision of free diagnosis and treatment for persons suffering from venereal diseases, or suspected to be suffering from them. Between 140 and 150 hospitals in England and Wales have expressed their willingness to participate in the schemes of local authorities, and although in a few instances the authorities of important hospitals have been reluctant to inaugurate during the war any fresh arrangements for the treatment of these diseases, this hesitation has been overcome in some cases. The shortage of medical staff and the pressure on the accommodation at most hospitals have presented obstacles. The former difficulty has been met to some extent by the Army Council's arranging that certain officers of the Army Medical Corps specially skilled in the treatment of venereal diseases should devote part of their time to the work of the clinics provided at general hospitals for the treatment of these diseases. Complete schemes have already been submitted by 115 out of the 145 councils that are charged with the execution of the regulations. The total population of the areas of these councils is about 29,000,000. Eighty-nine schemes, serving a population of about 25,000,000, have been approved, and the work has already started at sixty-two hospitals. It is estimated that the facilities provided at these hospitals will serve a population of at least 18,000,000.

ARTIFICIAL LIMBS FOR SOLDIERS

Great attention is being devoted to providing the best artificial limbs possible for the large number of mutilated men discharged from the army. Mr. John Hodge, minister of pensions, speaking at a public function, said that the outstanding ideal before the Pensions Ministry was not the allotment of pensions so much as the restoration to useful citizenship of mutilated men. Wherever possible an endeavor would be made to restore men to the full use of their limbs, and he was seeking money from the government for the purpose of starting a national experimental laboratory where we might get as near as possible to perfection in artificial limbs. He desired to call to his aid the greatest skill and the greatest inventive faculty that the country possessed in order to get the best artificial limb possible. Incidentally he mentioned that there were 900,000 pensioners on the books of his department, and that this number was being increased by hundreds every week.

FOOD ECONOMY

In a press interview, Lord Rhondda, the food controller, has announced a fresh campaign to awaken the public to the vital necessity of decreased eating. If voluntary measures fail, he will have no compunction in putting the nation on compulsory rations. The danger of the food situation lies not to so much in the submarine peril as in the world shortage of cereals, meats and fats. The timely action of the United States government, in strenuously curtailing food exports to neutral countries, should be of inestimable benefit to the Allies in Europe. But the tightening of the blockade is a two-edged sword. Imports of bacon and other products into the United Kingdom from Denmark are thereby bound to be seriously reduced. This throws us more than ever on the North American continent for our supplies. What we ask from the United States and Canada we cannot procure elsewhere. Unless the Allies in Europe are able to import the supplies necessary for feeding their armies and the civil populations, victory may slip from our united grasp. During the forthcoming twelve months, our minimum requirements in foodstuffs from the United States and Canada will amount to over 10,000,000 tons, and will represent an expenditure, without freight charges, exceeding $1,250,000,000 or roughly speaking, between 3 and 4 million dollars a day. Most of this will be for the purchase of cereals, hog products, sugar and meat. Several steps have recently been taken with a view to closer cooperation. The first is the formation by France, Italy and the British government of a meats and fats executive, on the lines of the wheat executive, which since last October has been buying in the United States and Canada all the wheat required by the Allies. In the future all purchases, by the Allies, of bacon, ham, lard, butter and cheese in the United States will be pooled through this newly formed executive, thus eliminating competitive buying between

the Allies, which inevitably tended to raise prices on the North American continent and at home. Several thousand tons of bacon have been bought within the last few days. Executives to pool purchases, by the Allies, of other foodstuffs may be established before long. A special mission, representing the Ministry of Food, will shortly leave for New York to set up the permanent organization for the meats and fats executive to take up with Mr. Hoover on the spot those matters that vitally affect us, and to keep us informed of developments in the United States and Canada. A long stride has been taken toward the stability of the sugar trade. The difficulty of providing shipping for sugar from the East has been largely responsible for a world shortage, with increased competition—and consequent high prices—for the Cuban crop. Mr. Hoover suggested that purchases of Cuban sugar should be centralized in a committee to sit in New York, on which Great Britain should have two delegates. As to prices, while Lord Rhondda admits that we are paying to the United States and Canada today for all our most important imported foodstuffs more than double what we paid before the war, he expresses his confidence that Mr. Hoover and Mr. Hanna are taking steps similar to those taken in this country to limit the profits derived from the food industries. Sir Arthur Yapp, director of food economy, has issued through the religious press an appeal to the churches, asking for their support and for the display of Christian patriotism in the direction of the conservation of food.

A Ministry of Public Health

As foreshadowed in previous letters to THE JOURNAL, draft legislation for the creation of a ministry of public health has been submitted to the government. Among the many problems that will face the government after the war, that of health and the cure of disease is one of the most important. The whole tendency of recent years is for the state to employ the medical profession more and more. Commencing with health officers, there were instituted in succession factory surgeons, school medical officers and tuberculosis medical officers. Finally came the insurance act, which transformed most of the physicians of the country into part-time state employees. During the last ten years the government has shown great and increasing activity in promoting maternity and infant welfare. Thus we have reached a stage in which an enormous amount of treatment is given by the state, either gratuitously or partly gratuitously. Like the institutions of this country in general, the various departments concerned with public health have grown up as the necessity arose, and were not created according to any theoretically elaborated plan. The result is a want of coordination and some consequent overlapping of the work of the departments. These disadvantages would be overcome by a ministry of health which would take charge of the whole field. But its establishment will encounter many difficulties because of the various interests involved. The insurance act authorities who represent the great friendly societies have certain views which probably diverge from those of the local government authorities, who now administer health legislation. The medical profession, again, has its own ideals, and views with alarm the increasing activity of the state, which may in the end reduce physicians to little more than state officials. A ministry of health does not necessarily imply this, but it is a great step which would facilitate the transformation.

A Chair of Tuberculosis

The Edinburgh University Court has instituted a chair of tuberculosis, the first one in this country. Sir Robert Philip, the writer on the treatment of tuberculosis, has been appointed as the first professor. The appointment is appropriate, as he was the founder at Edinburgh in 1887 of the first tuberculosis dispensary in the world. The movement then spread from Edinburgh to the European continent and to America.

PARIS LETTER

PARIS, Sept. 27, 1917.

The War

PROTECTION OF THE CHEST AND ABDOMEN OF COMBATANTS

At one of the recent meetings of the Académie de médecine, Dr. Delorme, medical inspector-general of the Service de Santé militaire, presented a communication on this subject. He stated that it was practically impossible to obtain complete and absolute protection of the thorax and abdomen by means of any protective apparatus because of the velocity and penetrating force of the rifle bullets; however, a considerable protection can be given against shell fragments, grenades and shrapnel, because the penetrating force of these missiles is much less than that of bullets. In trench warfare these missiles have, in a measure, replaced the bullet. A thoracico-abdominal protector made of a thin sheet of steel gives as much protection to the internal organs or viscera as does the steel helmet for the skull. Dr. Delorme has not sought to guarantee protection of all the thorax and all of the abdomen, but only those organs which, when wounded or injured, give rise to serious or grave conditions. They are the heart, the large vessels, the hilum of the lung, the lung itself, and the small intestine. The proposed cuirasse or chest protector may be made of a steel plate or of pieces or "leaves" (*feuilles*) of leather. On the basis of experience Delorme prefers the former, and he presented a model which will protect the combatant while he is advancing, as well as when he is lying down in the position of a reclining marksman, the shield being switched from front to back, as may be necessary. The academy appointed a commission to study this question, and its findings, whatever they may be, will be referred to the ministry of war.

TREATMENT OF INFECTED WOUNDS BY IODIZED STARCH

M. Auguste Lumière recently addressed the Académie des sciences on the advantages accruing from the use of iodized starch in the treatment of infected wounds, especially wounds of the soft parts, without the formation of deep fistulas or sinuses which would be inaccessible to the antiseptic. This antiseptic, iodized starch, has given much satisfaction. Wounds have been sterilized in a very short time. In the case of deep wounds of the soft parts without fracture, Lumière has used iodized starch irrigation according to the method of Carrel with great success. For that purpose he has made use of the following solution: soluble starch, 25 gm.; boiling water, 1,000 gm., "solution of iodo-iodurée à 1 per cent.," 50 c.c. This solution contains per liter 0.5 gm. of iodin, and is possessed of an antiseptic power that is equal to that of neutral solution of chlorinated soda. The solution is not irritating to the skin, nor does it injure clothing or bedding. Wounds treated with the solution heal with remarkable rapidity.

CONGRESS OF THE MUTILATED

A new congress, devoted to the study of the interesting question of "war injured," will be convened some time during the month of November, 1917. The organizers of the congress are the mutilated themselves, and delegates from all societies now existing in France for the purpose of assisting these men and protecting their interests will be present. A provisional program has been drawn up by the "Société Aide et protection" (society of aid and protection), the oldest of these mutual aid and defense societies. The principal points to be discussed at this congress are the following: raising pensions, and making a new classification of infirmities; questions relating to prosthetic appliances, placing the mutilated, employing reserves, admission requirements, institutions of cooperation, protection and conservation; the question of half pay without pension and the discharged auxiliaries, and the creation of a permanent council of mutilated, which will discuss and arbitrate all the matters in dispute. The address of the secretary of the National Congress of the Mutilated is rue Molière, 15, Paris.

RELIEF OF MEDICAL MEN IN THE ARMY OF THE ORIENT

Deputy Josse, having asked the ministry of war the following questions, (1) why the medical men of the Army of the East are not all treated in the same manner and from the same point of view, namely, the length of service, some having often seen certain of their comrades return to France without being ill, although they themselves have been there more than twenty months, and (2) whether a definite order of leave is obtainable, has received the following response: The relief of the officers of the Service de Santé of the Army of the East is affected according to the conditions provided for and applying in the Armies of the North and Northeast. It is not possible to follow strictly a rule of leave for the return of the personnel of the Army of the East, by reason of the perfect physical condition needed to resist, even under the best conditions, the climate of the Balkan peninsula. The choice of the officers sent to the Army of the East is always made on the basis of youth and health, although volunteers of all ages who can meet the physical requirements are accepted.

RÔLE OF THE AMERICAN RED CROSS

At a recent reunion of the Anglo-American Press Association, Major Murphy, high commissioner of the American Red Cross in Europe, speaking of the purposes of this organization, said that whatever may be the character of the American Red Cross in time of peace, he held the firm conviction that today, during this catastrophe, its supreme function is to help in every way possible to win the war. It would be in truth pitiable and despicable to regard its worth as charity alone at a time like this. During the past three years our allies have taken on themselves our part of the fight. They have borne all the burden of the difficulty, they have suffered all the wounds, they alone have died. It is inevitable that some time must pass before our troops can take their part in the trenches. When the time comes, the American organizations will demand a like privilege, and will consider it an obligation to do all that lies in their power to help the valiant nations, to whom our people are indebted.

AMERICAN DECORATED BY LEGION OF HONOR

The president of the republic has decided to award the cross of the Legion of Honor to Mrs. Henry Morgenthau, wife of the ex-ambassador of the United States to Constantinople. Mrs. Morgenthau has rendered invaluable service to the French hospital of Constantinople.

IMPROVING WAR BREAD BY NEUTRALIZING THE BRAN FERMENTS

For some time the effort has been made to improve war bread, and this subject has been spoken about often before the Académie des sciences and the Académie de médecine. Notable communications have been made by M. Lapicque, professor in the museum of natural history, and by Dr. Legendre to improve the quality of the bread manufactured from flour bolted at 85 per cent., simply by utilizing lime water in place of ordinary water for kneading the dough. The lime so introduced neutralizes the acidity of the flour containing a considerable proportion of bran, prevents the fermentation of the bread, and assures the best qualities in bread.

The Académie de médecine has appointed a commission to investigate this procedure, and recommend its adoption by the public if it is found to be valuable.

THE WAR AND GENERAL PARALYSIS

The three Paris societies which are devoted to the study of mental diseases, the Société clinque de médecine mentale, the Société medico-psychologique and the Société de psychiatrie, recently held two joint meetings to discuss two important questions in military mental medicine: the discharge of men with general paralysis, and shell shock with its special etiology, evolution and sequels. A whole session was devoted to each of these questions in turn, with M. Justin Godart, undersecretary of state for the military medical service, in the chair at one meeting, and Dr. Simonin, medical inspector, presiding at the second meeting.

The discussion on the discharge of soldiers with general paralysis was brought about by the extremely severe rule voted by the Société de neurologie in December, 1916, on this subject, and by the too literal application of this rule by the medical men entrusted with the task of passing on the candidates for discharge from the army. The society had officially declared that every soldier with general paralysis should be granted discharge No. 2, except when he had been the victim of traumatism of the brain, in which case discharge No. 1 should be granted with an incapacity rate of from 10 to 30 per cent.

Dr. Pactet, in the leading address, demonstrated that a doctrinal question was responsible for the vote of the Société de neurologie, namely, the belief that general paralysis is exclusively syphilitic in its origin. But to be syphilitic is not enough to bring on general paralysis. Can any one affirm that the fatigues, the emotions, the dangers of the war do not play a part in localizing, aggravating and accelerating the production of the meningo-encephalitis? Instead of regarding *en bloc* all the cases of general paralysis, each should be given a separate examination, and in each individual case the effort should be made to estimate the part for which the circumstances of war are responsible, just as is being done for the tuberculous. The military authorities must be asked for the data as to the services imposed on the patient, and if the general paralysis seems to have been influenced by them, then grant discharge No. 1, with a pretty high rate of incapacity. Dr. Lépine, professor of nervous and mental diseases at Lyons, declared his views as entirely in accordance with those of Dr. Pactet. Dr. Dupré, agrégé professor at Paris and hospital physician, insisted on the exclusively syphilitic origin of general paralysis, and demanded that discharge No. 1 should be reserved for cases in which some grave war mishap could be invoked.

Dr. Marie, physician-in-chief to the public *Asiles* of the Seine department, and Lortat-Jacob, Paris hospital physician, gave a description of the general paralysis of wartime as running a much shorter course, with no intermissions, with repeated sudden attacks, and with an early fatal outcome, skipping the stage of helpless dementia. Dr. Vallon, physician-in-chief of the Asile Sainte Anne, reiterated that the interests of the patients must not be sacrificed to too absolute thories—"fragile, like all theories." In the question of discharge from the military service, as in all medicolegal problems, each case must be studied separately, and the men on active service should not be treated any less favorably than workmen becoming paralyzed after an industrial accident.

Dr. Roubinovitch, physician-in-chief of the Bicêtre and Salpétrière hospitals, expatiated on the lessons to be learned from the Russo-Japanese War, which led to recrudescence of cases of paretic dementia in the army. Dr. Colin, physician-in-chief of the insane asylum at Villejuif, presented an array of exact data regarding the cases of general paralysis in soldiers that he has had in his charge. He remarked further that wounds of the brain are spoken of always as authorizing discharge No. 1, but in this connection it must be borne in mind that general paralysis has never been observed in men wounded in the brain. The physicians on the military discharge commissions interpret in the narrowest sense the term *traumatisme encéphalique*. The restrictions in question will not be applicable to more than a small proportion of the patients, not over 15 per cent., the majority of cases being among the territorials, the noncombatants. He then specified some cases in which the routine application of discharge No. 2 would constitute a revolting injustice.

The following rule was finally definitely adopted by a unanimous vote. For men with general paralysis, accord discharge No. 2, except in special cases in which a careful inquiry would demonstrate in times of peace, and more especially in time of war, the aggravating influence of military service. The rate of disability should then be from 60 to 80 per cent.

Death of Dr. Legludic

Word has been received of the death of Dr. Legludic, formerly director of the school of medicine and pharmacy of Angers, and physician in chief in the Hôtel-Dieu of that city. Dr. Legludic was 78 years of age.

Marriages

Lieut. Wade H. Fortner, M. R. C., U. S. Army, Princeton, Wis., to Miss Elsie Pineau of Milwaukee, at Fond due Lac, Wis., September 26.

Major Charles Walter Haverkampf, M. C., U. S. Army, Fort Oglethorpe, Ga., to Miss Francis Marion Armitage of Chicago, October 17.

Lieut. Louis Wallace Frank, M. R. C., U. S. Army, to Miss Jean Macdonough, both of Philadelphia, in New York, September 30.

Surg. Irving Whitmore Robbins, U. S. Navy, to Miss Caroline Brandriff Moore of Washington, D. C., at Scarsdale, N. Y., August 21.

Lieut. Charles R. Irving, M. C., W. Va. N. G., Hansford, W. Va., to Miss Elizabeth Logan Bentley of Richmond, Va., September 25.

Clarence Edward Northcutt, M.D., Lexington, Okla., to Miss Marie Robertson of Pauls Valley, Okla., August 30.

Homer Winfield Crane, M.D., Berkeley, Calif., to Miss Jessie Overshiner of Manteca, Calif., October 16.

Forrest Leroy Schumacher, M.D., DuBois, Pa., to Miss Emma Vail of Punxsutawney, Pa., October 3.

Michael Joseph McCarty, M.D., Pottsville, Pa., to Miss Blanche Reilly of Freeland, Pa., October 3.

William Christopher Williams, M.D., to Miss Ethel Mae Hopkins, both of Durham, N. C., October 4.

Julius Raymond Fernandez, M.D., to Miss Agnes E. Pedeaux, both of New Orleans, October 3.

Ward Allen Minor, M.D., to Mrs. Bessie Bogart, both of Utica, N. Y., September 8.

Deaths

William Moore Wright, M.D., Huntingdon, Tenn.; Washington University, St. Louis, 1869; aged 78; formerly a Fellow of the American Medical Association; a member of the Tennessee State Medical Association; a surgeon in the Confederate service throughout the Civil War; a member of the Tennessee Constitutional Convention in 1870; superintendent of prisons in Tennessee from 1871 to 1875; a trustee of the Tennessee Hospital for Insane, Nashville, from 1875 to 1879, and a trustee of the West Tennessee Hospital for the Insane, Bolivar, for several years; died at his home, October 6.

Wyman W. Pilcher, M.D., Warrenton, Ga.; Medical College of Georgia, Augusta, 1893; aged 47; formerly a Fellow of the American Medical Association; a member and president in 1912 and 1913 of the Medical Association of Georgia; one of the most prominent physicians of the South; trustee of the Warrenton Public School; died in the University Hospital, Augusta, October 8, from heart disease.

John Edwin Rigg, M.D., Wilkinsburg, Pa.; College of Physicians and Surgeons, Baltimore, 1879; aged 62; a Fellow of the American Medical Association, and once president of the Allegheny County Medical Society; for two years school director, and for several years president of the local board of health; president of the First National Bank of Wilkinsburg; died at his home, October 3.

James Stifer Gilbert, M.D., Bordentown, N. J.; College of Physicians and Surgeons, Baltimore, 1886; aged 58; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; from 1896 to 1901 mayor of the city, and later, when Bordentown adopted the commission form of government, continued as mayor; died at his home, October 11.

Melvin Sheldon, M.D., Brooklyn, N. Y.; Albany, N. Y., Medical College, 1893; aged 51; a member of the Medical Society of the State of New York, and for some time a member of the staff of the Samaritan Hospital, Brooklyn; treasurer of the Physicians' Economic League, of Brooklyn; died at his summer home, in Churchtown, N. Y., October 8, from pneumonia.

Albert Preston Tarter, M.D., Alameda, Calif.; University of California, San Francisco, 1882; aged 57; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; district surgeon to the Southern Pacific System; died at the Alameda Sanatorium, October 6, after an operation for disease of the intestines.

Earl Micaiah Stewart, M.D., St. Joseph, Mo.; University of Louisville, Ky., 1908; aged 33; formerly assistant surgeon, U. S. P. H. S., and on duty in the Marine Hospital, Louisville, and later surgeon in charge of the Santa Fe Hospital, La Junta, Colo.; died at the home of his parents, in St. Joseph, October 1, from laryngeal tuberculosis.

George W. Bruce, M.D., Moundsville, W. Va.; University of Pennsylvania, Philadelphia, 1848; aged 90; a member of the West Virginia State Medical Association; for several terms a member of the common council of Moundsville, and once mayor of the city; president of the Marshall County Bank; died at his home, October 6.

Hezekiah Gilbert Leigh, Jr., M.D., Petersburg, Va.; Bellevue Hospital Medical College, 1891; aged about 50; a member of the Medical Society of Virginia, and for many years coroner of the city, and surgeon for the Atlantic Coast Line Railway; died, September 22, at Blue Ridge Summit, Pa., from heart disease.

James A. Gibson, M.D., Buffalo, N. Y.; Western University, London, Ont., 1890; aged 50; a Fellow of the American Medical Association; secretary and professor of anatomy in the University of Buffalo; a member of the American Association of Anatomists; died at his home, October 4, from pneumonia.

Fremont C. Jones, M.D., Ebensburg, Pa.; University of Pennsylvania, Philadelphia, 1885; aged 55; formerly a Fellow of the American Medical Association; local surgeon of the Pennsylvania system, and physician to the Cambria County almshouse and jail; died at his home, October 4, from heart disease.

Obadiah Layton Huffman, M.D., Galion, Ohio; Jefferson Medical College, 1894; aged 56; formerly a member of the Ohio State Medical Association; a specialist in diseases of the eye, ear, nose and throat; died while making a professional call near Galion, October 7, from cerebral hemorrhage.

Andrew Baxter Miller, M.D., Chicago; College of Physicians and Surgeons, Chicago, 1898; aged 45; a Fellow of the American Medical Association; professor of clinical gynecology in the Chicago College of Medicine and Surgery; died in his office, October 19, from heart disease.

William Scott Thompson, M.D., Girard, Ohio; Starling Medical College, Columbus, Ohio, 1896; aged 47; formerly a Fellow of the American Medical Association; for many years local health officer; died in St. Elizabeth's Hospital, Girard, October 10, from pleuropneumonia.

John Copestake, M.D., Ames, Iowa; Queen's College, Birmingham, England, 1858; aged 80; a veteran of the Civil War, who was run over by an automobile in Chicago, September 17, died in the Presbyterian Hospital from his injuries, a few hours later.

Harmer M. Newman, M.D., South Milford, Ind.; Rush Medical College, 1886; aged 57; formerly a fellow of the American Medical Association; a member of the Indiana State Medical Association; died at his home, October 12, from nephritis.

Frank Herbert Gardner, M.D., Portland, Me.; Bowdoin Medical School, Brunswick and Portland, 1878; aged 63; formerly a Fellow of the American Medical Association; a member of the Maine Medical Association; died at his home, October 7.

Alfred L. Lafferty, M.D., Las Animas, Colo.; Keokuk Medical College, College of Physicians and Surgeons, 1905; aged 36; formerly a member of the Colorado State Medical Society; died at Howard, Colo., October 5, from tuberculosis.

Will Orvis Scott, M.D., Parish, N. Y.; Albany, N. Y., Medical College, 1891; aged 49; formerly a member of the Medical Society of the State of New York; died in Massena Springs, N. Y., May 24, from chronic parenchymatous nephritis.

Vardaman S. McLellan, M.D., Canton, Miss.; Kentucky School of Medicine, Louisville, 1891; aged 47; a member of the Mississippi State Medical Association; health officer of Madison County; died at his home, September 21, from acute gastritis.

Frederick J. Tischbein, M.D., Cincinnati; Medical College of Ohio, Cincinnati, 1895; aged 45; formerly a member of the Ohio State Medical Association; died at his home in Sedamville, Cincinnati, October 6, from cerebral hemorrhage.

John Byron Burns, M.D., North Yakima, Wash.; Trinity University, Toronto, Ont., 1896, aged 60; formerly a Fellow of the American Medical Association; died at the home of his son in North Yakima, October 4, from heart disease.

Glenn Lazarus Todd, M.D., Jackson, Miss.; Atlanta, Ga., College of Physicians and Surgeons, 1907; aged 35; a member of the Mississippi State Medical Association; was shot and killed in his office in Jackson, October 10.

George Raymond McDonagh, M.D., Toronto, Ont.; University of Toronto, Ont., 1876; L. R. C. P., London, 1877; aged 61; professor of otolaryngology in his alma mater; died at his home, August 26, from pneumonia.

Frederick Phineas Drake, M.D., London, Ont.; Victoria University, Coburg, Ont., 1883; aged 58; associate professor of medicine in the Western University, London, Ont.; died at his home, October 6, from heart disease.

Joseph Francis Somes, M.D., Vincennes, Ind.; Rush Medical College, 1889; aged 53; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; died at his home, September 28.

Arthur Lee Campbell, M.D., Kansas City, Mo.; St. Louis College of Physicians and Surgeons, 1890; Marion-Sims College of Medicine, St. Louis, 1891; aged 49; died in his private hospital in Kansas City, September 27.

Michael Richard Laden, M.D., Hartford, Conn.; New York University, New York City, 1898; aged 43; formerly a Fellow of the American Medical Association; died at his home, August 2, from heat prostration.

John Wesley Stork, M.D., Darmstadt, Ind.; Kentucky School of Medicine, Louisville, 1895; aged 46; a Fellow of the American Medical Association; died at his home, October 1, from cerebral hemorrhage.

Quimbert C. Schuhart, M.D., Rochester, N. Y.; College of Physicians and Surgeons, Baltimore, 1882; aged 61; formerly a member of the Medical Society of the State of New York; died at his home about September 24.

Alfred M. Gamman, M.D., Corning, N. Y.; New York Homeopathic Medical College, New York, 1866; aged 65; a pioneer oil man of Tulsa, Okla.; died in a hospital in Kansas City, October 5, from nephritis.

Harry Morris Capwell, M.D., Meshoppen, Pa.; Temple University, Philadelphia, 1915; formerly an intern in the Robert Packer Hospital, Sayre, Pa.; died at his home, September 22, from pulmonary tuberculosis.

William Urias Truckenmiller, M.D., Allenwood, Pa.; Buffalo University, 1868; aged 76; formerly a member of the Medical Society of the State of Pennsylvania; died on his farm, near Allenwood, September 30.

Wright Hall, M.D., Wilmington, N. C.; Edinborough Medical College, Lumbertown, N. C., 1875; aged 68; a member of the Medical Society of the State of North Carolina; died at his home, September 30.

Nora Soule Davenport, M.D., River Forest, Ill.; Northwestern University, Women's Medical School, Chicago, 1889; aged 72; a Fellow of the American Medical Association; died at her home, October 7.

Daisy Estelle Brown Bonner, M.D., Mount Sterling, Ky.; Woman's Medical College of Pennsylvania, Philadelphia, 1907; aged 38; a colored practitioner; died at her home, August 13, from uremia.

Jonathan Leigh, M.D., Hiawatha, Kan.; Washington University, St. Louis, 1854; aged 100; for sixty years a practitioner of Doniphan County; died at his home, October 9, from heart disease.

Charles H. Nourse, M.D., Darnestown, Md.; Georgetown University, Washington, D. C., 1869; aged 73; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, October 11.

Sarah F. Harris Norris, M.D., Hyde Park, Boston; New England Female Medical College, Boston, 1872; for eight years a medical missionary in Bombay, India; died at her home, October 2.

Joseph Dorpat, M.D., Arapahoe, Neb.; Missouri Medical College, St. Louis, 1875; aged 91; a veteran of the Civil War; died at the home of his daughter in Arapahoe, July 24, from senile debility.

John Henry Ellison, M.D., Altoona, Ala.; University of Tennessee, Nashville, 1888; aged 55; a member of the Medical Association of the State of Alabama; died at his home, September 26.

Jesse W. Hill, M.D., Fort Worth, Texas; University of Pennsylvania, Philadelphia, 1855; aged 84; a Confederate veteran; died at the home of his son, in Fort Worth, September 28.

James Henry Garlick, M.D., Staunton, Va.; Medical College of Virginia, Richmond, 1865; aged 75; a member of the Medical Society of Virginia; died at his home, October 7.

Charles W. Benham, M.D., Vincennes, Ind.; Louisville, Ky., Medical College, 1889; aged 56; a Fellow of the American Medical Association; died at his home, about October 3.

Gilbert Knapp Ellis, M.D., South Sodus, N. Y.; Niagara University, Buffalo, 1886; University of Buffalo, N. Y., 1897; aged 60; died at his home, September 19, from diabetes.

John Raymond Stark, M.D., Indianapolis; Indiana University, Indianapolis, 1913; an honor graduate; aged 26; died suddenly at his home, September 30, from heart disease.

Robert H. Cabell, Chillicothe, Mo. (license, Missouri, 1864); aged 83; formerly a member of the Missouri State Medical Association; died at his home, October 8.

Sebe Duane Austin, M.D., Albuquerque, N. M.; Cleveland College of Physicians and Surgeons, 1910; formerly of Marlboro, Ohio; died in Albuquerque, September 28.

Samuel D. Logan, M.D., Cainesville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 73; died at his home, October 2, from nephritis.

George Wood Jewett, M.D., Brewster, N. Y.; New York University, New York City, 1884; aged 85; died at the home of his grandson, in Brewster, October 4.

William Francis O'Brien, M.D., Pawtucket, R. I.; Tufts College Medical School, Boston, 1904; aged 38; died at his home, August 28, from typhoid fever.

H. C. H. Holcomb, M.D., Ashtabula, Ohio; Philadelphia University of Medicine and Surgery, 1868; aged 74; died at his home, September 23.

A. M. Horner, Laredo, Texas (license, Texas, forty-third judicial district board, 1907); died about September 28.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

"HAINES' GOLDEN TREATMENT"

A Cruel Humbug Exploited as a Cure for the Liquor Habit

"Dr. Haines' Golden Treatment" is sold and advertised by the Golden Specific Company of Cincinnati, Ohio. Before lying on the trade package carried with it a risk of prosecution, the "Golden *Treatment*" was sold as "Golden *Specific*." The preparation is one of the numerous fakes exploited as cures for the liquor habit which can be given secretly, curing the alcoholic in spite of himself. Here are some of the claims that have been made:

"Golden Treatment is Odorless and Tasteless—Any Lady Can Give It Secretly at Home in Tea, Coffee, or Food."

"Golden Remedy, the Great Home Treatment For Drunkards."

"Let no woman despair. The sure quick permanent cure for drunkards has been found. It is Golden Remedy. It has no odor. It has no taste. Just a little is put in the drunkard's cup of coffee or tea or in his food. He will never notice it, he will be cured before he realizes it, and he will never know why he abandoned the taste for liquor."

"Golden Remedy has cured some of the most violent cases in a day's time."

". . . a craving for liquor relieved in thousands of cases without the drinker's knowledge, and against his will."

Any one with an elementary knowledge of the treatment of alcoholism knows how cruelly false such claims as these are. Not only is the statement that the stuff will cure the drunkard "without his knowledge" and "against his will" a falsehood, but it is also a cowardly falsehood in that it deceives those who in the very nature of the case will hesitate to raise any protest against the deception.

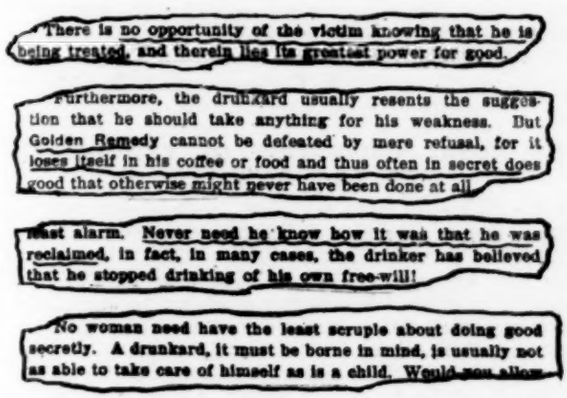
The Golden Specific Company advertises that it will send a "free trial package" to any one who will use it. Those who answer the advertisements are sent (1) a form letter so prepared as to simulate an individual communication, (2) a sample of the "Golden Treatment" and (3) a booklet

Some typical advertisements of "Haines' Golden Remedy" (reduced) of various dates.

entitled "The National Curse, Drunkenness." The letter, the directions on the sample treatment, and especially the booklet all emphasize the alleged ease with which drunkards can be cured without their knowledge and against their will. Says the letter: "We are sending you a trial package of Golden Treatment . . . to prove to you how easily and secretly it can be given . . . without the drunkard ever suspecting that he is being treated at all." And the booklet: "Many drunkards have been made temperate men who have taken Golden Treatment in their coffee without their knowledge, and today believe They Quit Drinking of Their Own Free Will." And elsewhere in the book: "There is no oppor-

tunity of the victim knowing that he is being treated, and therein lies its greatest power for good." On the envelope containing the sample treatment we read: "This is but a trial treatment to show how easily and secretly it may be given . . ." The directions accompanying the sample are very brief, but the recipient is told that "fuller directions and suggestions accompany the full treatment."

Those who send for the "full treatment" (price $3.00) receive a box containing forty powders. The directions accompanying the box are, as was promised on the "trial treatment," much fuller. Moreover there is a marked differ-


There is no opportunity of the victim knowing that he is being treated, and therein lies its greatest power for good.
Furthermore, the drunkard usually resents the suggestion that he should take anything for his weakness. But Golden Remedy cannot be defeated by mere refusal, for it loses itself in his coffee or food and thus often in secret does good that otherwise might never have been done at all.
least alarm. Never need he know how it was that he was reclaimed, in fact, in many cases, the drinker has believed that he stopped drinking of his own free-will!
No woman need have the least scruple about doing good secretly. A drunkard, it must be borne in mind, is usually not as able to take care of himself as is a child. Would you allow

Reproductions of clippings from the booklet sent to prospective victims by the Golden Specific Company. Note the emphasis put on the alleged power of the "Golden Remedy" to cure the liquor habit without the knowledge or cooperation of the patient.

ence in the attitude of the company toward its victim after it once has received payment for its worthless treatment. The whole trend of the advertising (until the purchase is actually made and the money paid) is that of leading the prospective purchaser to believe that the "treatment" is not only efficacious when given without the knowledge of the patient, but that this is an ideal way to administer it. The directions that accompany the $3.00 package of powders, however, express, or at least imply, doubt as to the probability of success unless the patient is anxious to be cured of his habit and takes the stuff knowingly. "If necessary to administer without the knowledge of the patient . . ."—commence the directions after the victim has paid her money; and: "Whenever it is possible to induce the patient to take the treatment *voluntarily* with a full knowledge of its qualities and effects, it is always the better way . . ." Further, the poor woman, who has purchased this "treatment" in the belief that she can reclaim her husband or brother or father, without his knowledge, is told that "after patient has been under treatment for two days, give sponge (or towel) baths of warm salt water every three days for at least two weeks"! Finally, of course: "If one treatment does not succeed, get another quick."

Although the worthlessness of this product is obvious it was believed that its composition would be of interest, and an analysis of the stuff was made in the Chemical Laboratory of the Association. The report follows:

LABORATORY REPORT

"Original packages of 'Dr. Haines' Golden Treatment for the Liquor Habit' (price, $3.00 each), prepared by the Golden Specific Co., Cincinnati, O., were submitted to the Chemical Laboratory for examination. Each box contained 40 powders, the average weight of each powder being .75 gm. (11.5 grains). The material had a light brown color, a celery-like odor and a sharp taste. Under the microscope a few starch grains resembling those of ipecac were discerned; wheat starch was present in relatively large amounts. Qualitative tests demonstrated the presence of capsicum, lactose, starch, a small amount of resin and a very small amount of alkaloid. The amount of alkaloid was so small that positive tests could not be obtained for the ipecac alkaloids. Emodin-bearing drugs were not present. The quantitative determinations were ash 1.47 per cent.; moisture (loss at 130°) 4.29 per cent.; lactose 47.5 per cent.; alkaloids 0.0003 per cent.

"From the analysis it appears that Dr. Haines' Golden Treatment is composed essentially of milk sugar, starch, capsicum and a minute amount of ipecac."

Mr. Samuel Hopkins Adams in his series in "The Great American Fraud" devoted one chapter to "The Scavengers." In it he paid his respects to the fakers who professed to cure the drug habit. In the same chapter Mr. Adams discussed the fake liquor-habit cures. In this connection he said:

"The Sunday newspapers and small weeklies teem with advertisements of 'drink cures,' which are supposed to exorcise the alcoholic craving when secretly given in tea or coffee. Few of these concoctions can be described as immediately dangerous, though none of them is really safe. All are swindles. They do not cure the drink habit."

Then Mr. Adams named several preparations of the type he had in mind. In the list was "Dr. Haines' Golden Specific"; it was properly classified.

Correspondence

EFFICIENCY METHODS AND THE PHYSICIAN'S WORK

To the Editor:—How can we, in this time of great demands, accomplish the best work possible with the least expenditure of time and strength? During the last twenty years such experts as Taylor, Gilbreth and Emerson have developed a new science of efficiency, making magician-like changes in the industrial world. Cannot something of this be applied to the physician's work?

Expert studies have proved two facts, and these must be clearly grasped before one can have any sympathetic understanding of this work. First, the average seemingly busy man wastes, daily, solely from inattention and carelessness, an incredible amount of time. Wastages of one to two hours working-time daily are not exceptional but ordinary. Second, processes one repeats over and over, even handed down through generations, do not thereby become perfected, but ossified. Working methods, to be improved, should be persistently studied, analyzed and recorded and the deductions applied. Let us consider a few of the efficiency principles:

1. Efficient Records: The science of quick, accurate, adequate case-recording should be developed. We have many varying systems. Too many of us keep no records at all. Convenient blanks, a good system of symbols, rubber stamps and outlines all need perfecting. More uniformity among workers in similar lines would tend greatly to scientific progress.

2. Standardized Conditions: In large industrial plants, experts are constantly at work planning the simplest details of choice, condition and arrangement of equipment, tools and materials. The physician's office and treatment rooms are, in a sense, a factory in which many complex processes are carried out. As a rule, equipment and arrangement simply grow. The moment's needs are met, and in time we have a helter-skelter mass of stuff with many really needful things lacking. Careful planning and listing of each detail of equipment, beginning with the larger details of office furniture, lighting, etc., the details of dressing-table, laboratory, emergency bag, the filing system for histories, medical journals, catalogs, can well be studied. Such changes simplify one's work and clarify and refresh one's mind. Results are immediate.

3. Standardized Operations: Mr. Frank Gilbreth chanced to see at an exposition an expert girl-operator labeling shoe-polish boxes. After a few minutes' use of his stop-watch he made suggestions whereby her speed increased from twenty boxes in forty seconds to twenty in twenty-six seconds on the first trial, and in twenty seconds on the second. Such results involve use of time and motion studies, methods which are described in the works of these experts and which can be applied to many of the activities of the physician. So routine a process as the questioning of patients can be greatly speeded, made accurate and improved by a few lists of ques-

tions covering routine points, planned and memorized. This does not tend to routinism, but, clarifying best present practices, makes a firm foundation for growth. Sequences of motion and process in all operations from the simplest, such as applying iodin, to the most complex manipulations of the surgeon, would respond well to study and analysis.

4. Written Practice Instructions: In the modern industrial plant each worker, from the highest paid to the lowliest, has his definite printed instructions for each detail of his work. The physician who has worked out a good process, such as a technic for cleansing the ear, giving hypodermic injections, etc., will naturally put this in writing for practice and future improvement. Our chief need here, however, is in good printed instructions for patients. Many of us do, more of us ought to, spend endless hours instructing our "chronics" how to eat, sleep, bathe, exercise, take enemas, cleanse cavities, etc., when such instructions could far better be given in printed slips, adapted for marking to apply to the individual case. Printed instructions are far better than hurried, perfunctory verbal ones.

Much valuable work along this line is now being done for the Medical Department of our Army and some by hospital staffs and the medical staffs of industrial corporations. I believe a general reading of the books in the appended list would prove rewarding, not only in a practical way but as a most interesting record of American ingenuity, persistence and achievement against opposition and discouragement:

Taylor, Frederic W.: Principles of Scientific Management.
Gilbreth, Frank E.: Motion Study.
Emerson, Harrington: Course in Personal Efficiency.
Hudders: Indexing and Filing.
Lewis, St. Elmo: Getting the Most Out of Business.

Stewart Lewis, M.D., Lakehurst, N. J.

THE EARLY RECOGNITION OF MULTIPLE SCLEROSIS

To the Editor:—Neither in a paper read at the last session of the American Medical Association on this subject nor in the discussion, was mention made of a symptom which, if observed early and correctly interpreted, helps very materially in the early recognition of the disease.

When either a chronic or an acute retrobulbar neuritis occurs which cannot be explained by the ordinary causes, especially in a youthful person, a suspicion of a beginning multiple sclerosis must be aroused even though none of the other cardinal symptoms are present. The first symptom of a chronic retrobulbar neuritis is usually an impaired vision; a most characteristic symptom is better vision at night than in the daytime. The cause of this impairment is a central scotoma, at first only for red or green, later absolute, due to the involvement of the papillomuscular bundle of nerve fibers.

Ophthalmoscopically it is possible at times in the early stages to distinguish a blurring of the temporal half of the disk, and later, a pallor; at times no distinguishable ophthalmoscopic signs are present. The commonest cause of a chronic retrobulbar neuritis is a chronic alcohol-tobacco poisoning—the so-called tobacco-alcohol amblyopia. Another frequent cause is diabetes. At times a chronic retrobulbar neuritis is due to occupational poisonings with lead, arsenic, dinitrobenzene, etc. When a retrobulbar neuritis of the chronic toxic type is present, and we are able to rule out tobacco-alcohol poisoning, diabetes or chronic occupational intoxication, a grave suspicion of a beginning multiple sclerosis must be aroused. In an acute retrobulbar neuritis the earliest symptoms are usually severe disturbances of central vision, and pain on moving the eyeball. Ophthalmoscopically the symptoms may vary from slight hyperemia of the nerve head to severe degrees of papillitis.

In the ordinary case of acute retrobulbar neuritis, there is a tendency to quick recovery. When, however, the attack has been a severe one and the nerve badly involved, atrophies, partial or complete, at times ensue.

The commonest cause of an acute retrobulbar neuritis is pus in one of the accessory nasal sinuses, especially in the sphenoidal; the anatomic relation of the sphenoidal sinus to the optic nerve is the cause of this. Almost any of the acute infectious diseases, as well as any form of poisoning, may bring about an acute retrobulbar neuritis.

When an acute retrobulbar neuritis occurs, and these various causes can be ruled out, multiple sclerosis must always be thought of. Bruns and Stolting (*Zeitschrift für Augenheilkunde*, January, 1900) found the optic nerve involved in thirteen out of thirty-eight cases of multiple sclerosis. Anatomic studies showed the pathology to be an interstitial neuritis in various and varying stages. This article first called my attention to the importance of either acute or chronic retrobulbar neuritis as an early symptom of multiple sclerosis. During the past seventeen years I have seen two cases in which this symptom was present when nothing else suggested a possible multiple sclerosis, both of which later developed into well defined cases of that disease.

E. F. Snydacker, M.D., Chicago.

THE MORAL OBLIGATION OF THE INTERN TO THE HOSPITAL

To the Editor:—I have read with much interest the letter of Dr. Lockwood in regard to the demoralization of hospital interns (The Journal, Oct. 13, 1917, p. 1290). If conditions in his own city are as deplorable as they seem from the perusal of his letter, I believe that much can be accomplished toward improving this regrettable state of affairs by a study of conditions elsewhere. It is usually impracticable in a large city to require those taking an examination for positions of hospital interns to sign a pledge stating that they will take no other hospital internships, if successful in the hospital that requires the pledge. From long experience on examining boards of several hospitals, I have formed the opinion that we must look on the problem from the point of view of the applicant as well as that of the examiner. It has been our custom at the Michael Reese Hospital during recent years to hold an examination at about the same time as that of other hospitals. The position as intern at the Cook County Hospital has always been considered as the greatest honor that an undergraduate could have. This is a matter of tradition which is well deserved and will probably always be so. We have attempted in the past to ask the young men to sign pledges not to take internships in any other hospital, and they have been so frequently broken that we think it best at present to look on the question from the point of view of the student and to permit him to take the Cook County examinations, and if he is successful in the latter, to choose between his Cook County position and our own. At the same time we have attempted through an educational campaign to show the resident staff that our hospital service is almost as good at the present time as the Cook County, and we have been very successful in having our interns recommend our service to various friends in the graduating class, and this more liberal policy has enabled us to omit any pledge. Our positions are taken by those successful candidates who do not prefer the county hospital positions, and the quality has been constantly improving, so that we have today a resident staff that can compare most favorably with that of the county hospital. We thoroughly disapprove of any system of appointing interns, and believe that a competitive examination is the best test, especially if it is combined with an investigation of the character and previous scholarship of the applicant. In Boston and New York the principal hospitals have combined and hold a joint examination for the position of intern, and then permit the successful applicant to take his choice of which hospital he desires to enter.

I am not ready to express an opinion in regard to the value of such a system, owing to a lack of personal experience. A fifth compulsory year, during which every member of the senior class will be obliged to serve a fifth hospital year before his degree will be given, will soon be in force in Illinois, and this will eliminate any friction that now exists. "The unfortunate laxity of professional obligation and duty which hospitals condone" in Dr. Lockwood's letter is one that is not likely to occur if competitive examinations for hospital positions are the rule, and a more liberal policy is pursued by hospitals toward their interns both at the time of

examinations, and in giving them better treatment after entrance than many hospitals do at present.

If hospitals will agree not to accept an intern who has not completed his term of service in any other hospital, much of the abuse to which Dr. Lockwood refers, and dishonorable practices arising therefrom, will be abolished. By this I mean that candidates who have begun an intern service in another hospital cannot be lured to leave that hospital by friends who happen to be on another staff of interns, and not be able to get another position if they have been discharged for misbehavior, etc. DANIEL N. EISENDRATH, M.D., Chicago.

"EXPERIMENTAL PELLAGRA"

To the Editor:—The attention of this office has been called to a statement in the editorial on experimental pellagra (THE JOURNAL, Sept. 29, 1917, p. 1082) which is capable of misinterpretation.

McCollom and Pitz are quoted, correctly, as follows: "There is no reason whatever why we should assume, as Voegtlin, Goldberger, Funk and others have done, that pellagra is due to a lack of a specific unidentified dietary factor, a 'vitamin.'"

Neither Professor Voegtlin nor Dr. Goldberger has ever assumed to the exclusion of other possibilities, nor have they stated in any of their publications, that pellagra is due to a lack of a specific vitamin. This was clearly recognized, as were other possibilities; but a perusal of their published work will show that their views on this point have been interpreted erroneously. G. W. McCOY, M.D., Washington, D. C.
Director, Hygienic Laboratory, U. S. P. H. S.

"THE FULL SACRIFICE"

To the Editor:—Your editorial in THE JOURNAL, October 20, p. 1355, entitled "The Full Sacrifice," strikes home. I am guilty; and yet I cannot bow gracefully to the charge of neglecting my duty. Surely I have done no bargaining. Indeed, on numerous occasions I have expressed my willingness to do anything I am asked to do. It happens though that in years I am past 55; but in health and strength I am often taken for 40. Except for a partial plate of teeth, I am physically and mentally as fit as I ever was. And in patriotism I am not wanting, for I am American through and through. Besides, I am married to an English woman who has lost many relatives and loved ones in the present war. Now what more do I need to fire me with a spirit of service? True, my specialty is that of obstetrics; but I know other things too. I feel that a man of my experience should be given tasks commensurate with his ability to perform them; yet I am willing to let someone else be the judge of my fitness. You say, "Men of mature age have the glory of choice." I fail to see it. They seem to be denied an opportunity to serve because they are of mature age. Will you not point out a little more clearly how one beyond the age limit can make the full sacrifice?

FRED ELMER LEAVITT, M.D., St. Paul.

Casualties on Steam Railways.—For the year ended Dec. 31, 1916, according to Accident Bulletin 62 of the Interstate Commerce Commission, the total number of casualties on the steam railways of the United States was 206,723, of which 10,001 were fatal. The figures show an increase over the previous year of 1,371 in the number of persons killed and 34,835 in the number injured. Not all of these represent accidents on trains, however, as 525 persons were killed and 129,740 were injured in nontrain accidents, which means those occurring in and around shops, on boats and wharves, at stations, freight houses, engine houses, coaling stations, water stations, tracks, etc., but not accidents occurring directly in connection with operation of trains. Of the number killed in 1916 there were 2,941 employees, 291 passengers and persons carried under contract, and 6,769 other persons, including trespassers and nontrespassers. Of the persons injured, 176,923 were employees, 8,008 passengers and persons carried under contract, and 11,791 other persons.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TRUE ANTIPERISTALSIS IN THE SMALL INTESTINE

To the Editor:—1. What is the consensus of opinion as to the possibility of true antiperistalsis in the small intestine?
2. Kindly cite recent literature on this subject.
CARL A. DRAGSTEDT, M.S., Iowa City, Iowa.

ANSWER.—1. True antiperistalsis of the small intestine has so far never been observed in man or animals under normal conditions. Antiperistalsis may occur when the small intestine is exposed to the air, or when a portion of the intestine is isolated and subjected to various experimental manipulations. It would also appear that, contrary to the original observations of Mall, a portion of the small intestine that has been resected and sutured in the reversed direction may, after a lapse of several months, show normal antiperistalsis. It has also been shown that antiperistalsis, or something closely akin to it, may occur in intestinal obstruction, and possibly in certain types of stasis. Small particles, like lycopodium spores, introduced in large enemas, may reach the stomach. This has by some been interpreted as evidence of normal antiperistalsis. Boldyreff asserted that antiperistalsis of the duodenum occurred as a normal process whenever the gastric acidity exceeded from 0.25 to 0.30 per cent. But Hicks and Visher showed that the regurgitation of duodenal contents into the stomach under those conditions is not due to antiperistalsis of the duodenum. According to Alvarez, any condition that induces a motor automatism of the jejunum of a higher order than that of the duodenum will lead to antiperistalsis.

Alvarez, C. W.: The Motor Functions of the Intestine from a New Point of View, THE JOURNAL, July 31, 1915, p. 388.
Beer and Eggers: Are the Intestines Able to Propel Their Contents in an Anti-Peristaltic Direction? *Ann. Surg.*, 1907, **46**, 576
Boldyreff: The Self-Regulation of the Acidity of the Gastric Contents and the Real Acidity of the Gastric Juice, *Quart. Jour. Exper. Physiol.*, 1914, **8**, 8.
Cannon, W. B.: Movements of the Stomach and Intestines in Some Surgical Conditions, *Ann. Surg.*, 1906, **43**, 524; Peristalsis Segmentation and the Myenteric Reflex, *Am. Jour. Physiol.*, 1912, **30**, 114.
Hicks and Visher: Physiology of Stomach: Mechanism of Regurgitation of Duodenal Contents into Stomach, *Am. Jour. Physiol.*, 1915, **36**, 1.
McClure and Derge: A Story of Reversal of the Intestines, *Bull. Johns Hopkins Hosp.*, 1907, **18**, 4712.
Prutz: Transposition of Intestine, *Arch. f. klin. Chir.*, 1904, **72**.

BRUCK'S SEROCHEMICAL TEST FOR SYPHILIS

To the Editor:—Kindly publish the technic of Bruck's serochemical test for syphilis, or advise me where I can find it.
R. H. L. BIBB, M.D., Saltillo, Mexico.

ANSWER.—Nitric acid when added to syphilitic blood serum causes a precipitate to form. Bruck's technic is based on an acid containing, per hundred gm., 24.77 gm. of nitric acid, or, per hundred c.c., 28.48 c.c. of nitric acid with a specific gravity of 1.149. He uses 0.3 c.c. To 0.5 c.c. of clear serum, 2 c.c. of distilled water are added. This is shaken, and then 0.3 c.c. of nitric acid is added with a standardized pipet. This is shaken and permitted to stand at room temperature for ten minutes. Then 16 c.c. of distilled water at 15 C. are added and shaken slowly three or four times so as not to foam. This shaking is repeated ten minutes later, and then the tube is set aside for one-half hour. If the serum is syphilitic it shows a distinct flocculent turbidity. In twelve hours, a precipitate is piled up on the floor of the test tube. If the serum is nonsyphilitic, there is no precipitate at any time. The test is described in the *Münchener medizinische Wochenschrift*, Jan. 2, 1917, p. 25.

DISPOSAL OF COMMISSION ON RECEIVING A HIGHER ONE

To the Editor:—I received a First Lieutenant's commission in the Medical Reserve Corps, Sept. 10, 1917, which I accepted. Under date of Sept. 26, 1917, I received a Captain's commission in the Medical Reserve Corps, which I also accepted. Shall I return the First Lieutenant's commission? F. M. V.

ANSWER.—No.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, Nov. 13-14. Sec., Dr. T. J. Stout, Brinkley.

Arkansas: Eclectic: Little Rock, Nov. 13. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

Connecticut: New Haven, Nov. 13-14. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven.

Connecticut: Homeopathic: New Haven, Nov. 13. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

Connecticut: Eclectic: New Haven, Nov. 13. Pres., Dr. J. W. Fyfe, Saugatuck.

Delaware: Wilmington, Dec. 11-13. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Jacksonville, Dec. 4-5. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

Maine: Portland, Nov. 13-14. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Maryland: Baltimore, Dec. 11. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

Nebraska: Lincoln, Nov. 14. Sec., Dr. J. J. Hompes, 612 Security Mutual Life Bldg., Lincoln.

Nevada: Carson City, Nov. 5. Sec., Dr. S. L. Lee, Carson City.

New Hampshire: Concord, Dec. 10-12. Sec., Dr. W. S. Crosby, Beacon Bldg., Manchester.

Ohio: Columbus, Dec. 4-6. Sec. Pro-tem., Dr. Herbert M. Platter, 185 E. State St., Columbus.

South Carolina: Columbia, Nov. 13. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Texas: Dallas, Nov. 20-22. Sec., Dr. M. F. Bettencourt, Mart.

Virginia: Richmond, Dec. 11-14. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

West Virginia: Clarksburg, Nov. 21-23. Chairman, Dr. S. L. Jepson, Capitol Bldg., Charleston.

Mississippi June Examination

Dr. W. S. Leathers, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, June 19-20, 1917. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 15 passed and 4 failed. Eleven candidates, including 1 osteopath, were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	78
University of Alabama		(1917)	84, 89
Loyola University		(1916)	76
Tulane University of Louisiana	(1915) 81, 84 (1917) 80, 80, 81, 85.		
Jefferson Medical College of Philadelphia		(1916)	80; (1917) 81
University of Tennessee		(1917)	79
University of Texas		(1916)	75
University of Virginia		(1914)	82
	FAILED		
College of Physicians and Surgeons, Little Rock		(1910)	*
Chicago College of Medicine and Surgery		(1917)	72
Meharry Medical College		(1916)	67
Memphis Hospital Medical College		(1911)	61

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons		(1907)	Georgia
Illinois Medical College		(1908)	Indiana
University of Louisville		(1887)	Texas
Tulane University		(1891) (1903)	Louisiana
University of Maryland		(1884)	Virginia
Memphis Hospital Medical College		(1903) (1910)	Tennessee
		(1912)	Arkansas
University of Tennessee		(1916)	Tennessee

* No grade given.

Virginia June Examination

Dr. J. W. Preston, secretary of the Virginia State Board of Medical Examiners, reports the written examination held at Richmond, June 19-22, 1917. The examination covered 8 subjects and include 80 questions. An average of 75 per cent. was required to pass. Of the 65 candidates examined, 60 passed and 5, including 1 osteopath, failed. Eleven candidates, including 1 osteopath, were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1916) 82; (1917)	88
Johns Hopkins University		(1916)	83
North Carolina Medical College		(1917)	86, 86
Ohio State University		(1917)	87
Hahnemann Medical College of Philadelphia		(1917)	87
Jefferson Medical College of Philadelphia		(1917)	90
Medical College of Virginia	(1916) 78; (1917) 75, 75, 75, 75, 77, 77, 78, 78, 78, 79, 79, 80, 81, 81, 81, 82, 82, 82, 83, 83, 83, 83, 85, 85, 85, 85, 85, 85, 86, 86, 86, 88, 88, 88, 88, 89, 89, 90, 90, 93.		
University of Virginia	(1915) 87; (1917) 81, 86, 88, 89, 89, 90, 90, 90, 92, 93.		
Meharry Medical College		(1917)	77
	FAILED		
Medical College of Virginia		(1912) 74; (1916) 56; (1917)	72, 72

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1907)	Dist. Colum.
Atlanta Medical College		(1916)	Georgia
Tulane University of Louisiana		(1906)	Louisiana
College of Physicians and Surgeons, Baltimore		(1909)	N. Carolina
		(1912)	W. Virginia
University of Maryland		(1898)	W. Virginia
University of Michigan Homeo. Med. School		(1910)	Indiana
Lincoln Memorial University		(1913)	Tennessee
Vanderbilt University		(1909)	N. Carolina
University of Moscow		(1906)	Russia

Wisconsin June Examination

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Milwaukee, June 26-28, 1917. The examination covered 18 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 43, including 6 osteopaths, passed and 2 failed. Fourteen candidates, including 1 osteopath, were licensed through reciprocity. One candidate was granted a reregistration certificate. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1914) 79.1; (1916) 77.6, 81.3, 82.1, 85.3, 89.4.	(1915)	78.1
Hahnemann Medical College of Chicago	(1917) 83.6, 87.	(1891)	82.3
Loyola University	(1915) 78.6;	(1917)	76.6
Northwestern University		(1914)	82.2
Rush Medical College	(1889) 86.2; (1915) 85.7, 87.8; (1917) 82.3, 87, 87.7, 88.9, 89.5, 91.6.	(1916)	86.8
University of Illinois		(1917)	86.8
Johns Hopkins University		(1916)	88.8
Washington University		(1917)	91.4
Columbia University		(1916)	86
University of Cincinnati		(1917)	86.7
University of Pennsylvania		(1917)	85.4
Marquette University	80.6, 80.7, 80.9, 83.3, 86, 89.2.	(1917)	80.2
University of Christiania		(1915)	83.2
	FAILED		
Chicago College of Medicine and Surgery		(1912)*; (1915)	70.3

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1903) (1912)	Illinois
Northwestern University		(1909) N. Dak. (1911)	Illinois
Rush Medical College		(1912)	Illinois
University of Illinois		(1914) (1915)	Illinois
Louisville Medical College		(1905)	Arkansas
University of Minnesota		(1916)	Minnesota
Ohio State University College of Medicine		(1915)	Ohio
University of Pennsylvania		(1897)	Penna.
Wisconsin College of Physicians and Surgeons		(1909)	N. Dakota
University of Toronto		(1906)	N. Dakota

* No grade given.

Oklahoma July Examination

Dr. R. V. Smith, secretary of the Oklahoma State Board of Medical Examiners, reports the oral and written examination held at Oklahoma City, July 10-11, 1917. The examination covered 11 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 21 candidates examined, 18, including 5 osteopaths, passed, and 3, including 1 osteopath, failed. Twenty-five candidates, including 4 osteopaths, were licensed through reciprocity and 4 candidates were granted reregistration certificates. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1913)	76
Northwestern University		(1916)	87
University of Illinois		(1917)	86
University of Louisville		(1917)	81
Tulane University of Louisiana		(1915)	91
University of Maryland		(1917)	82
Washington University		(1916)	86
University of Oklahoma		(1915) 78; (1917)	80
Jefferson Medical College		(1905)	85
Meharry Medical College		(1917)	82
Vanderbilt University		(1916)	81
Fort Worth School of Medicine		(1917)	84
	FAILED		
St. Louis College of Physicians and Surgeons		(1888)	70
Memphis Hospital Medical College		(1913)	68

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas		(1913) (1913) (1913)	(1915) Arkansas
University of Louisville		(1898)	(1916) Kentucky
Louisville Medical College			(1904) Arkansas
Tulane University of Louisiana			(1897) Arkansas
Baltimore University			(1899) W. Virginia

Barnes Medical College	(1899) Arkansas; (1909)	Missouri
National University of Arts and Sciences	(1912)	Missouri
St. Louis College of Physicians and Surgeons.....	(1908)	Missouri
St. Louis University	(1907)	Missouri
University Medical College of K. C.	(1913)	Missouri
Washington University	(1903)	Missouri
University of Nashville	(1907)	Tennessee
University of Tennessee	(1892)	Arkansas
Memphis Hospital Medical College	(1912)	Arkansas
University of Texas	(1912)	Texas
Medical College of Virginia	(1906)	Virginia

Medicolegal

Business Corporation and Manager Giving Medicine

(Godfrey vs. Medical Society of New York County (N. Y.), 164 N. Y. Supp. 846)

The Supreme Court of New York, Appellate Division, Second Department, reverses a judgment for $2,500 rendered in favor of the plaintiff, who asked damages for an alleged malicious prosecution for having unlawfully practiced medicine without a license, of which he was acquitted. The court says that it regards this case as one of very great importance, as being likely, if it should stand as a precedent as it was, to lead to the opening of many quack sanatoriums and "cure-all" institutes under the guise of business corporations or registered trade-names of individuals not licensed physicians.

The evidence in this case showed that the plaintiff, who was not a physician, had organized, under the business corporations law of New York State, the "Gatlin Institute of New York, Incorporated, . . . to maintain and operate institutes for the cure of the liquor and drug habit." He became and acted throughout as its manager. He purchased from the so-called parent corporation in Chicago the right to use the so-called "Gatlin treatment" for the cure of the drink habit, which consisted for the most part in the taking of a certain liquid medicine and pills, the ingredients of which were unknown to the plaintiff or to any one connected with the New York corporation, the articles being obtained from the said parent corporation or plant. The trial justice properly charged that the New York corporation could not practice medicine; that is, that in that respect it stood the same as an individual. He also properly charged the jury that if the plaintiff, as the manager of the corporation, aided and abetted it in so practicing medicine, he was equally guilty with the corporation itself, which of course is in strict accord with the provisions of Section 2 of the penal law. Still, the court thinks the trial was conducted on an entirely mistaken theory of the law, and that, on the correct theory thereof, probable cause for the criminal prosecution was clearly established. The trial justice conducted the trial and submitted the case to the jury on the theory of law that, if the plaintiff, as manager of the New York corporation, had it treat its patrons, although in its own name, by giving medicine only "on the advice and counsel, or prescription, in the particular case, of a duly licensed physician, if was not practicing medicine, and neither the corporation nor the plaintiff would be guilty of violating the law," which prohibits such practice by any person other than a licensed physician. That the treatment amounted to the practice of medicine by some one cannot be doubted.

Even assuming that the law of the case was correctly declared by the trial justice, as above summarized, the court thinks that probable cause was established for the criminal prosecution because the evidence demonstrated that the advice or prescription of a licensed physician, on which the plaintiff claimed the institute only treated, was a mere sham and pretense. In all instances such prescription was merely treatment by the Gatlin method. There was in the prescription no modification or direction as to time or quantity of the dose, or anything of the sort. The medicine was a secret. Neither the plaintiff nor the physician knew its ingredients. The giving of a prescription by a physician must, of necessity, involve the exercise of judgment as to the particular case, and as well some scientific knowledge of the nature of the medicine prescribed. Here the physician could have possessed no such knowledge, and even the plaintiff, the manager, did not have it. Hence such a prescription was a mere sham and pretense.

On the cross-examination of the physician of the institute, an inquiry to show that he made no analysis or other scientific examination to ascertain the ingredients of the medicine was excluded. This proof was entirely competent to show that the prescriptions given by the physician were pretenses, based on no scientific knowledge.

The court regards the verdict here as directly against a sound and necessary public policy, and is convinced that it should not stand; so the judgment is reversed, with costs; and the complaint dismissed, with costs.

Meaning of the Terms "Physician" and "Medicine"

(People ex rel. Gage vs. Siman et al. (Ill.), 115 N. E. R. 817)

The Supreme Court of Illinois says that a "physician" is one versed in or practicing the art of medicine, and the term is not limited to the disciples of any particular school. The term "medicine" is not limited to substances supposed to possess curative or remedial properties, but has also the meaning of the healing art—the science of preserving health and treating disease for the purpose of cure—whether such treatment involves the use of medicinal substances or not. In common acceptation, any one whose occupation is the treatment of diseases for the purpose of curing them is a physician, and this is the sense in which the term is used in the medical practice act.

The term is not used in any different sense in Section 15 of the vital statistics act, which requires every physician, midwife, undertaker and sexton to register his or her name, address and occupation with the local registrar of the vital statistics district in which he resides. Section 7 of the act directs that the required certificate of death shall be made and signed by the legally qualified physician, if any, last in attendance. The term "legally qualified physician" in this connection is not different in meaning from the term "physician" in Section 15. Each means a physician authorized to practice medicine. The qualification of the physician is only incidentally connected with the subject-matter of the act, which is vital statistics. The state authorizes osteopathic physicians to treat human ailments without the use of medicine and without performing surgical operations, and if a patient dies he cannot be said to have died without medical attendance, so as to authorize the coroner or local registrar to make the certificate of death.

A proviso to Section 3 of the medical practice act declares that only those who are authorized to practice medicine and surgery in all their branches shall call or advertise themselves as physicians or doctors. This proviso was regarded by the counsel for the respondents as sustaining the position that only persons licensed to practice medicine and surgery in all their branches are authorized to issue certificates of death. The proviso is somewhat inconsistent with the provision that treatment for any physical ailment shall constitute the practice of medicine and which authorizes such treatment by persons not authorized to practice medicine and surgery in all their branches. It does not, however, declare that persons treating physical ailments without the use of medicine and without performing surgical operations are not physicians, but only that they shall not call themselves physicians or advertise themselves as such. Whether the legislature can constitutionally prohibit one of these classes from publicly assuming the title of physician or doctor was a question discussed in the brief of the relator which the court does not find it necessary to decide.

This appeal was brought directly to this court on the ground that if the word "physician," in Sections 7 and 15 of the vital statistics act, means only those who are authorized to practice medicine and surgery in all their branches, then to that extent those sections are unconstitutional, and that the proviso to Section 3 of the medical practice act is unconstitutional; but the court does not find it necessary to decide those questions, since it holds that the word "physician," in the vital statistics act, is not limited to any particular school of medicine, but includes osteopathic physicians.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthal. and Oto-Laryng., Pittsburgh, Oct. 29-30.
Amer. Public Health Association, Washington, D. C., Dec. 4-7.
Kentucky State Medical Association, Louisville, Nov. 6-9.
Southern Medical Association, Memphis, November 12-15.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Thirtieth Annual Meeting, held at Newark, N. J., Sept. 17-19, 1917

(*Continued from page 1378*)

Recurrences After the Five Year Period in Carcinoma of the Cervix

Dr. X. O. Werder, Pittsburgh: In fifty-nine cases of cancer of the cervix in which operation by the radical cautery was performed, I have twenty-seven patients, 45.76 per cent., living at the end of five years. In eight of these cases, or 29 per cent., recurrences are reported from five to nine years after operation. While the five year recoveries after the cautery operation, therefore, show better results than those of Wertheim, who is credited with 42.5 per cent. of cures, the late results after five years are decidedly less favorable. The great difference in the percentage of late recurrences following these two methods of radical operation of carcinoma of the cervix is explained by the more unfavorable material dealt with as compared with that at the large European clinics. Late recurrences practically all develop in the glandular structures in which metastasis must have existed at the time of operation. It has been demonstrated that these may remain quiescent for years before active development takes place. The greater frequency of late recurrences following the cautery operation must, therefore, be accounted for by a larger portion of lymphatic involvement due to a more advanced stage of the disease at the time of operation. As only a small proportion of the regional glands liable to become invaded from the original cancer focus can be extirpated, this procedure is not considered as of any material influence in reducing the percentage of late recurrences. On the other hand, it may be argued that an agent which causes cancer metastases to remain dormant for so many years in such a large percentage of cases must have had some specific effect on the cancer cells, not present in the other operative procedures. It seems possible that some product results from the intense heat in contact with living tissues which, while not absolutely destructive, renders the cancer elements harmless, in many cases for years.

DISCUSSION

Dr. J. Henry Carstens, Detroit: I have never had a case of cancer of the cervix in any of my suprapubic hysterectomies. I recall one patient who had a discharge and some irritation of the cervix. I took her uterus out by way of the vagina, had it examined carefully, and there was nothing malignant about it.

Dr. Edward A. Weiss, Pittsburgh: In 1898 Dr. Werder described the so-called combined operation for cancer of the cervix. Two years later Wertheim described identically the same operation. When Wertheim's attention was called to this fact he gave Dr. Werder priority, but in none of his subsequent writings has he given Werder credit for the operation. Dr. Werder was not satisfied with the results of this operation because the mortality was high and the morbidity very great. Twelve years ago he began to do what he now calls igniextirpation, and his results have been remarkable as compared with those from the old operation, both as to mortality and to morbidity.

Dr. X. O. Werder, Pittsburgh: During the last two or three years I have had four cases in which I found carcinoma in the cervix following the removal of the uterus some time previously. In most cases hysterectomy for fibroid antedated the operation for cancer of the cervix for a number of years, so that I am beginning to consider the removal of the cervix in cases of fibroid of the uterus, and when I do suprapubic hysterectomy I open the uterus and inspect its cavity to see whether there is any evidence of carcinoma. In several instances I have found carcinoma present in the body of the uterus. It is also advisable to do a preliminary curettement to be absolutely sure of the condition of the cervix. With those precautions we can safely continue to do suprapubic hysterectomy, which is far superior to a panhysterectomy, not even considering the fact that it is accompanied by less mortality.

Gallbladder Trouble Complicating Disease of the Internal Genitals

Dr. J. Henry Carstens, Detroit: One frequently finds gallstones connected with pelvic trouble, especially fibroid tumors, pelvic adhesions and displacements. If we inquire into the history of these women, we find that they often have had puerperal fever, septic conditions following labor, or miscarriages, and were confined to bed for four to six weeks. Even if no symptoms are complained of by the patient, one can usually detect gallbladder trouble, and be prepared to relieve it when operating for the other trouble.

The Thyroid in Gynecology

Dr. Herman E. Hayd, Buffalo: I recommend thyroid extract in the treatment of the hemorrhages of women, when the causes are obscure, until a diagnosis can be established and the best kind of subsequent treatment adopted. In the amenorrheas of young girls, when the periods are irregular or scanty, and even absent, or when the menstrual function has not appeared at the usual pubic period, I have of late years relied on thyroid feeding, in gradually increasing doses, in conjunction with good hygiene and exercise.

The Influence of Pregnancy on the Development, Progress and Recurrence of Cancer

Dr. William Seaman Bainbridge, New York: Two cases of malignancy in pregnant women bear a distinct relation to the question of the possible influence of pregnancy on the initiation, progress and recurrence of cancer. In the first case, one of recurrent carcinoma of the breast, there was a previous history of amputation of the right breast fourteen months earlier. When first examined the patient, a primipara, was nearly five months pregnant, and had a large mass in the right axilla and another above the clavicle, with metastases in the right lung. The patient and family refused to submit to the termination of the pregnancy, and despite indicated treatment the disease extended rapidly and proved fatal in less than a year. The child was born at term and lived one month. In the second case, one of sarcoma of the eye, the patient, a mother of two children, was pregnant seven months when first seen. At this time she had a small growth, which was promptly excised with an apparently safe margin of healthy tissue. There were three other successive operations for rapid recurrences and extension of the disease—all within a period of two months. Termination of the pregnancy had been refused, and a healthy child was born at term. One month later the patient succumbed.

In the first case the growth above the clavicle was probably not malignant until pregnancy took place; from the history of the second case it would seem as if the beginning of the development of the sarcoma was closely related to the beginning of the pregnancy, and that the almost terrific rapidity of development and recurrence after operation was commensurate with the progress of the pregnancy. From these and other personal observations, as well as from the literature, it is apparent that pregnancy exercises a stimulating and hence a malign influence on coexistent cancer in any part of the body. Therefor, in all such cases there seems little ground for delaying the termination of pregnancy.

Toxemia and Eclampsia and Its Treatment

Dr. Asa B. Davis, New York: I have performed 359 abdominal cesarean sections. In twenty-five instances, toxemia of pregnancy has been the indication. These twenty-five cesarean sections have been done on twenty-three different women. Eight women died. Twenty-nine children were

delivered, twins in two cases. One set of twins was dead when the patient was admitted. The mother lived. Nine of the twenty-nine children delivered failed to leave the hospital alive. It is a noticeable fact that few pregnant women in private practice under the care of skilled obstetricians develop eclampsia. The time to treat eclampsia is before it occurs.

Conservative Treatment of Eclampsia

DR. ROSS MCPHERSON, New York: A survey of the mortality statistics of patients suffering from eclampsia, taken from the reports of numerous writers both here and abroad, will show that, treated by radical methods, the maternal mortality approaches an average of from 25 to 30 per cent., these figures being easily available, and that the fetal mortality averages from 40 to 50 per cent. Our series now includes fifty-five true convulsive toxemias. Of these fifty-five, seven mothers died, showing a gross maternal mortality of 12.7 per cent. Two of these mothers, however, died before treatment of any sort could be administered. In other words, there was a mortality of approximately 9 per cent. Abdominal cesarean section has absolutely no place in the treatment of convulsive toxemia of pregnancy, except in the cases in which the eclampsia is accompanied by a deformed pelvis or some severe disproportion between the mother and the child. More conservative measures can be resorted to with a lower mortality.

Indications for Interference in Preeclamptic Toxemia

DR. WILLIAM G. DICE, Toledo, Ohio: The character and quantity of the waste products from a study of urine are not definite indexes of severity of the toxemia. The systolic blood pressure taken throughout pregnancy is ordinarily a better index. A steadily increasing rise from the average normal, 110 to 120, up to 150, is significant, and there is a sudden increase in the evidence of toxemia when blood pressure reaches that point. Elevated blood pressure often precedes albuminuria, and the two are not necessarily proportional. When the blood pressure reaches 170, if other signs of toxemia are also present, time for expectant treatment is near an end. Toxins in the blood give rise to a retinitis, the first symptom objectively being edema, later infiltration, degeneration and hemorrhages or perhaps detachment of the retina; both the latter indicate grave toxemia. In the early stage of retinitis, the vision may not be affected, but the ophthalmoscope shows a haziness of the fundus, an inability to make out the fine details, which is the first sign of cloudy swelling. The interference with vision depends on the location of the lesion, whether in the macula or only in the areas surrounding it. The condition clears up entirely if it does not go beyond the stage of cloudy swelling. In primiparas this haziness of the retina is easily detected if the pupil is widely dilated, and this haziness is the first indication of retinitis; but if there has been previous eye trouble, it probably cannot be made out so early. Conservation of vision as well as life demands prompt induction of labor.

Methods for Overcoming Mechanical Obstruction to Pregnancy

DR. ROBERT T. MORRIS, New York: Several forms of salpingitis leave mechanical obstruction to pregnancy because of adhesions, or of closed lumina between ovary and uterus; but in a certain proportion of selected cases the buried fimbriated end of an oviduct may be freed and grafted near the fundus of the uterus, thus making a short circuit past adhesions or a closed lumen. I have a patient about to be delivered of a child who had only one such oviduct allowing of plastic repair of this kind. Perhaps the most extensive plastic work I have done was for a patient who had lost both ovaries and tubes some years previously. In that case I first grafted an ovary from another patient, and about a month later I reopened the abdomen to determine if the graft appeared to be in good condition. This was the case and a new oviduct was constructed from a transplanted loop of ileum, one end of which encompassed the engrafted ovary, the other end being sutured to the walls of the open lumen of the uterus. There has been no practical result in the latter case, and it may be that the mucous secretion from the bowel transplant may interfere with impregnation. But the work may, at least, be done experimentally for a patient who understands and accepts the work on that basis.

Should the Uterus Be Removed When It Becomes Imperative to Interrupt Pregnancy?

DR. EMERY MARVEL, Atlantic City, N. J.: The interruption of pregnancy is accepted only when maternal life is seriously jeopardized. The exciting cause is active within the uterus, and involves the uterine structure. To remove the conception and leave the uterus when serious toxemia exists leaves a major part of the burden that could be removed. If the uterus is permitted to remain, it invites the recurrence of the condition and in a more aggravated form. If maternal life is threatened by coexisting maladies—such as tuberculosis, or renal or cardiac inefficiency—hysterectomy protects against recurrence. The removal of the uterus eliminates the necessity for sexual abstinence. Hysterectomy secures greater freedom from the menace which immediately threatens; it protects against recurrence of the trouble, and provides for the continuance of the sexual life without fear and all that it involves. This can be accomplished with no increased risk over other surgical methods.

COLORADO STATE MEDICAL SOCIETY

Forty-Seventh Annual Meeting, held at Colorado Springs, Sept. 25-27, 1917

The President, DR. ALEXANDER C. MAGRUDER, in the Chair

Achylia Gastrica

DR. J. L. MORTIMER, Denver: In achylia gastrica, definite abnormal changes of the mucous membrane can be demonstrated, although not infrequently they are absent. We differentiate between a primary, congenital achylia simplex and secondary achylia. The latter either develops on the basis of a neurasthenia, or necessitates organic changes, thereby accompanying diseases of the stomach, such as chronic gastritis or cancer of the stomach, or general diseases, such as pernicious anemia, pulmonary tuberculosis, typhoid, syphilis and chronic interstitial nephritis. Of foremost importance in the treatment of achylia gastrica is the dietetic management. This must be individualized according to the predominating symptoms. Meat is usually poorly tolerated. It should be served minced or hashed, and preference given to the white meats and fish. Vegetables are prepared in purée form. Fats, excepting butter and cream, are poorly digested. Meat extractions and carbonated water have a tendency to stimulate the flow of gastric juice. Milk that is cooked, and cocoa, malted milk, rice, farina and tapioca may be added. Eggs, buttermilk, toast, zwieback and reheated stale bread may be allowed. If gastric fermentation is present, gentle lavage, three times weekly, with physiologic sodium chlorid solution, salicylic acid or resorcin, 1:1,000, is useful. Other accessory measures that prove beneficial are gentle abdominal or general massage, faradization of the abdomen, the Priessnitz or hot abdominal compress, and finally the alternating hot and cold abdominal douche.

DISCUSSION

DR. PHILIP HILLKOWITZ, Denver: Einhorn contends that in the cases of achylia gastrica he has examined, no alterations were found in the mucosa, because the pathologist naturally considered it established that there can be no change in function without some change in the tissues. But in these days we doubt the universality of this dictum, and that is why we explain the etiology of achylia gastrica on the basis of innervation.

Fasting as a Therapeutic Measure in the Treatment of Gastro-Intestinal Disorders in the Tuberculous

DR. C. D. SPIVAK, Denver: No matter what the derangement of the gastro-intestinal tract may be, there is present an injury to the integrity of the organ and consequently it cannot perform its function efficiently. The logical conclusion is that the stomach and the intestine should be put at rest until the repair is effected. Such rest means the

cessation of feeding. I have applied this form of rest cure in many cases, with *restitutio ad integrum*, in the majority of them, and certain relief in all cases, except in malignancy.

DISCUSSION

Dr. Herbert Whitney, Denver: Nothing has been of so much benefit in my practice as the proper observation of the principles of rest and exercise in the treatment of patients with chronic disease.

Dr. H. A. Smith, Delta: The chiropractor, the dietist and the food cranks are getting results in cases that are slipping away from the practitioner of medicine because he does not do one of two things, namely, he either does not go to the trouble of making a diagnosis, or fails to instruct the patient in the matter of diet. If the doctor will regulate the diet of these patients, tell them how much to eat, what to eat, how many meals they should have a day, and the quantity of food for each meal, he will get results in the class of cases in which nutrition is disturbed indirectly.

Dr. M. R. Fox, Sterling: If we paid more attention to rest and exercise, and used a little more "horse-sense," we would get better results.

Dr. Robert Levy, Denver: For many years, superalimentation has been practiced by some of the very best and most reputable authorities in the treatment of tuberculosis. In many instances superalimentation has developed a desire for food, and the patients have improved.

Dr. Julius L. Mortimer, Denver: An effort should be made so to prepare food that it will be inviting and palatable to the patients. I have seen patients eat a great deal more because the food was prepared and served in a most inviting manner, thus stimulating their appetites.

Dr. Kate Lindsay, Boulder: Allen and Josslyn have obtained excellent results in diabetic cases with their methods of treatment simply because they have treated patients individually.

Acute Cholecystitis

Dr. Z. H. McClanahan, Colorado Springs: Drainage is now being employed in a progressively lessening number of cases of gallbladder disease, while cholecystectomy is gaining in frequency of employment in proportionate ratio. As the most frequent site of infection has been shown to be the gallbladder wall, this is a rational change, and cholecystectomy is the rational treatment in the absence of certain contraindications. Pancreatitis contraindicates cholecystectomy. Granting that cholecystectomy is the ideal procedure, drainage still has a field of usefulness in the superlatively acute cases in which the immediate prevention of mortality is of first consideration.

Cholecystectomy Versus Cholecystostomy

Dr. F. N. Cochems and Dr. A. J. Bender, Salida: The definite indications for cholecystectomy are all cases of chronic cholecystitis, injuries, ulcerations, perforations and gangrene of the gallbladder, persistent fistulas and primary malignancy. The advantages are easier convalescence, fewer adhesions, greater percentage of recoveries, diminished recurrences and lower percentage of mortality. The disadvantages are the destruction of the special function of the gallbladder, overlooking common duct stone or stricture. Cholecystostomy would be the operation of choice in many cases of acute cholecystitis, stones in the hepatic and common ducts, acute pancreatitis and when gallstones are accidentally discovered during the course of operations on other abdominal organs.

DISCUSSION

Dr. H. S. Henderson, Grand Junction: I think the pendulum is swinging too far backward. Cholecystectomy is performed more frequently than it should be. Cholecystectomy is indicated when the gallbladder is badly damaged, when its mucous membrane is no longer functioning. In malignant disease the gallbladder should be removed; but the indiscriminate removal of gallbladders because they have stones in them or are inflamed is not good surgery.

Dr. Leonard Freeman, Denver: The consensus of opinion among surgeons today is that cholecystectomy is better than cholecystostomy. It is better to take out the gallbladder than to drain it, provided we can take out the gallbladder with safety to the patient, and that the common bile duct is not obstructed or going to become obstructed. There are cases in which the gallbladder is so badly involved that we are willing to run the risk of taking it out; but such cases are not extremely common. If a patient's condition is such that an attempt to remove the gallbladder increases the risk, the gallbladder should not be touched. If the common bile duct or the cystic duct is obstructed, it should be taken out.

Dr. J. G. Hughes, Greeley: When a drainage operation because of the presence of infection is performed, the chances of healing and recovery of the patient are materially enhanced by the use of autogenous vaccines.

(*To be continued*)

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Evansville, Sept. 26-28, 1917

The President, Dr. John H. Oliver, Indianapolis, in the Chair

SYMPOSIUM ON DISEASES OF THE GALLBLADDER

Diagnosis

Dr. A. C. Kimberlin, Indianapolis: Owing to a better knowledge of pathology, we have changed our ideas very materially as to the manner in which the infection reaches the gallbladder. We now accept the theory that in most instances it is carried through the blood stream. A certain periodicity in the attacks, and local tenderness may or may not be conspicuous. Neither is jaundice always present. We must know more of the pathology. We do not give enough time to a careful study and analysis of the clinical history.

Medical Treatment

Dr. Charles Sowder, Indianapolis: I would emphasize the necessity for active preventive treatment during the course of and following acute infectious processes which we have determined must furnish the active cause. If we can maintain a normal flow of healthy bile, and by medicinal measures tend to keep the gallbladder sterile, we have taken a long step forward in the prevention of gallbladder disease. We can lay down no hard and fast rule to guide us in treatment. In general, if there is obstruction of the cystic duct resulting in enlargement of the gallbladder, or if repeated attacks of pain or disturbance of digestion render the patient unable to follow his usual vocation, surgical aid should be given. All cases of cholelithiasis with recurring attacks of cholecystitis or pericholecystitis should be subjected to immediate surgical interference. When acute cholecystitis can be ruled out, at least six months' medicinal treatment should be instituted before surgical measures are considered.

Cholecystectomy Versus Cholecystotomy

Dr. H. H. Martin, Laporte: When Rosenow published the results of his experimental work on gallbladder infections, the profession began to realize the limitations of simple drainage of the gallbladder, and to appreciate the cause for so many surgical failures in those cases in which success was legitimately anticipated. Rosenow proved that in the majority of cases, and probably in all, the infection takes place by way of the circulation direct, and that it is the gallgladder walls, and not the bile or the gallbladder mucous membrane, that is primarily involved. Consequently simple drainage fails to relieve many of these patients. Every pathologic gallbladder demanding operative interference should be removed, provided this operation does not add to the mortality rate of a cholecystectomy over a cholecystotomy.

Dr. H. A. Duemling, Fort Wayne: In my opinion, both operations are valuable. Some cases require simply incision and drainage; other patients as certainly must have the gallbladder removed to regain health. We should be very careful in obtaining the history of the patient so that we may make a correct diagnosis; patients, however, are cured not by scientific examination, but by scientific treatment. I do not believe that there ever has been a case of recurrence of

stone. Stones do not reform—they are overlooked. This fact led to the exploration of the ducts—a tremendous step forward, and then a new operation appeared—cholecystotomy. Finally, the removal of the gallbladder was advised, but we have not yet reached our goal.

DISCUSSION ON THE GALLBLADDER

DR. THOMAS B. NOBLE, Indianapolis: Gallstone disease, as it is commonly referred to, is simply an end-product, an ultimate outgrowth of some antecedent happening or accident in the way of infection, or fault in the habit of life of the individual. Cholecystectomy and cholecystotomy are both valuable procedures. They each have their specific indications. I do not believe that every gallbladder requiring operative interference should be removed. The important thing is drainage—in every case.

DR. CHARLES STOLTZ, South Bend: There is no doubt that stones do recur. Stones form in the hepatic and also in the common duct, and we know of cases in which the biliary ducts are filled with stones. The gallbladder should not be removed in every instance. In many cases drainage offers rest for the mucosa and submucosa of the common ducts as well as the biliary ducts.

DR. J. RILUS EASTMAN, Indianapolis: It is mischievous to take out a gallbladder simply because it is an attractive operative procedure. If we had to deal with an infection of the gallbladder alone, this would be a very easy question to solve; but I have never seen a badly infected gallbladder that was not associated with infections of the ducts, or with infection of the pancreas. I believe we shall decide more and more to utilize the gallbladder for drainage in such cases.

DR. MAURICE ROSENTHAL, Fort Wayne: Unfortunately those cases of biliary duct and gallbladder infection which require excision of the gallbladder are the very cases which really require drainage of the ducts. It is quite possible and just as easy to drain the gallducts after removing the gallbladder as to drain them through the gallbladder. Passing a small tube through the stump accomplishes drainage of the ducts very satisfactorily.

DR. H. O. PANTZER, Indianapolis: The term "gallstone disease" is not comprehensive enough, and represents only a small part of gallbladder disease. Gallstones may be retained a long time without causing any trouble if the gallbladder is normal. It is futile to attempt any medication in cases of gallbladder disease, for living typhoid germs have been found in the gallbladder twenty, even fifty, years after the attack of typhoid.

DR. A. S. JAEGER, Indianapolis: I do not think all inflammations of the gallbladder are infective, or that this is Rosenow's belief. Undoubtedly the gallbladder is infected in the majority of cases, owing to bacterial activity; but a nonspecific inflammation of the gallbladder will give the same results.

Complications and End-Results of Tonsillectomy and Adenectomy

DR. J. W. IDDINGS, Lowell: Specialists in laryngology have a duty to perform in educating the laity and the profession that the tonsil and adenoid operation is not a minor operation, but one which may be attended with severe, even fatal, consequences; that definite indication should be present before it is advised or attempted, and that it should be undertaken with the same care, skill and caution displayed in any major operation.

DISCUSSION

DR. G. W. SPOHN, Elkhart: The technic is not so important as the results. It matters not so much how the tonsils and adenoids are removed, if the work is done correctly, thoroughly, expeditiously and with no injury to the adnexa. The end-results of such work are satisfactory to both patient and physician.

DR. W. A. HOLLIS, Hartford City: The danger of pulmonic infection through aspiration of infectious material, or from the ether, or the danger of suffocation from inhalation of solid particles, is greatly exaggerated. If the operation is done in the Trendelenburg position, it is impossible to have such an accident if one is a careful operator.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

October, CLIV, No. 4

1 *Utilization of Immune Response in Renal Tuberculosis. E. Bonine, New York.—p. 469.
2 *Pulse Pressure Test in Preoperative Estimation of Reserve Strength of Cardiovascular System. B. Z. Cashman, Pittsburgh.—p. 476.
3 *Acute Appendicitis; Analysis of Five Hundred Cases. F. Beekman, M. K. Smith and S. Everingham, New York.—p. 490.
4 Two Cases of Congenital Persistent Acroasphyxia in Infants. N. Toomey, Iowa City, Iowa.—p. 500.
5 Anxiety Neuroses. F. R. Fry, St. Louis.—p. 506.
6 Bronchiolitis Obliterans Following Inhalation of Acrid Fumes. J. H. Wagner, Pittsburgh.—p. 511.
7 Syphilis of Nervous System in Some of Its Clinical and Pathologic Manifestations. W. G. Spiller, Philadelphia.—p. 523.
8 *Researches in Regard to Coagulo Reaction of Syphilitic Serum. H. Uemura, Japan.—p. 533.
9 *Nervous Symptoms of Polycythemia Vera. H. A. Christian, Boston.—p. 547.
10 *Heat Stroke; Report of One Hundred and Fifty-Eight Cases from Cook County Hospital, Chicago. H. Gauss and K. A. Meyer, Chicago.—p. 554.
11 Electrocardiographic Study of Heart Showing Ectopic Auricular Contractions, with Special Reference to Influence of Vagus Nerves on Ectopic Focus. D. Luten, St. Louis.—p. 564.
12 Etiologic Factors of Acne Vulgaris. A. Strickler, Philadelphia.—p. 579.
13 *Chronic Heart Block. Treatment by Alpha-Iodin. J. M. Blackford, Seattle, Wash., and F. A. Willius, Rochester, Minn.—p. 585.
14 Vitiligo and Syphilis of Central Nervous System. E. M. Auer, Indianapolis.—p. 592.

1. **Immune Response in Renal Tuberculosis.**—Bonime's paper may be summarized as follows: The prognosis in renal tuberculosis up to the present has been unfavorable under the present day method of treatment. Nephrectomy as an operation for the relief of the patient suffering from tuberculosis of the kidney is a failure, for it fails to remove the focus of infection outside of the kidney, leaving the patient liable to extension of the infection to the remaining kidney from the same focus. The tuberculin treatment of renal tuberculosis has not been as satisfactory as the tuberculin treatment of other forms of tuberculosis, (1) because of the inability to make an early diagnosis; (2) because of the production of early damage before the tuberculin treatment was instituted; (3) as a result of the failure to recognize the important rôle that mixed infection plays in the production of symptoms and pathologic processes. Enough has been shown, however, with tuberculin treatment of renal tuberculosis, in fact, to make it almost certain that were it instituted before permanent damage has resulted—in other words, early in the disease—the prognosis of renal tuberculosis would have a far more favorable aspect. Early diagnosis in renal tuberculosis can be accomplished through the tuberculin test alone. Its more frequent use in early symptoms referable to an indefinite lesion anywhere in the urinary tract is absolutely essential to the more hopeful treatment of renal tuberculosis.

2. **Pulse Pressure Test of Cardiovascular System.**—Pulse pressure readings were used by Cashman as a means of estimating the ability of the circulatory system to withstand strain, for it is the additional strain of the surgical ordeal that is responsible for circulatory exhaustion or collapse. His plan was to subject the patient to the strain of work and observe not only the systolic presssures but the diastolic and pulse pressures as well, for the pulse pressure is the head of pressure which is actually driving the blood through the circulatory system, and inasmuch as the cardiovascular system maintains pulse pressure when an additional strain is imposed on it, so much is efficient circulation maintained. The chief value of the test is in the cases in which the force and rhythm are regular or but slightly irregular, the type of case in which the ordinary method of examination does not throw light on the condition of the circulatory apparatus, and the type of case in which surgeons are so

liable to blunder. This test signifies the ability of the cardiovascular system to respond to strain at the time the test is made, and it does not signify what portion of the cardiovascular system is at fault. The condition may be due to a permanently damaged heart muscle or cardiovascular system, which is working with very little reserve and which may fail if subjected to sudden strain. On the other hand, the condition may be a temporary one, due to toxemia, exhaustion, or fatigue, but nevertheless this is the type of case that should not be subjected to additional severe strain. How frequently women are worn out from multiple pregnancies, toxemias, and chronic infections suffering from chronic fatigue and exhaustion. If the histories of these patients are gone into carefully it will be found that they tire readily, suffer from dizziness, dyspnea on exertion, weak spells, or slight swelling of the feet and ankles, although the heart appears to be normal by the ordinary methods of examination. These are the patients who have stormy convalescence after abdominal section. Patients with little reserve and who respond so poorly to light strain should be subjected to neither a severe operation nor a cross-country run as an elective procedure. Cashman describes his method of procedure in detail.

3. **Acute Appendicitis.**—There were thirty-four deaths, or a mortality of 6.8 per cent., among the 500 cases analyzed by the authors. Twice as many died who were operated on the third day after the onset of symptoms as on any other day of the illness. The mortality of those under 10 years and over 50 is 23 per cent. as opposed to a mortality of 4.7 per cent. for those between. Complications were found in 151 persons, or 30 per cent. There were 107 cases of appendicular abscess, or 21 per cent. The mortality was 5.7 per cent. There were forty-five instances of diffuse peritonitis, or 9 per cent. Twenty-one, or 47 per cent., of these patients died. Fecal fistula occurred twenty-four times, an incidence of 5 per cent.; four patients died, a mortality of 17 per cent. Pneumonia occurred twelve times, an incidence of 2.5 per cent. There were four fatalities in the series, or 33 per cent. Secondary peritoneal abscess occurred in eleven instances, being present in one patient at operation and ten times as a sequel. Three of these were subphrenic abscesses. Of the eleven cases, four patients died, a mortality of 36 per cent. Only two cases of ileus were found: one was due to adhesions; the other was a paralytic ileus.

A history of previous attacks was obtained in one fourth of the cases. Vomiting was mentioned in the histories of four fifths of the cases. Five per cent. more had nausea without vomiting. Constipation was five times as frequent as diarrhea. A blood count was recorded in 377 of the cases. Neither a normal blood count nor a very high one rules out appendicitis, although such counts are comparatively rare. The mortality was higher among the two extremes and most favorable with a moderate leukocytosis. The relation of the numerical count to the differential count did not appear to have any prognostic significance. Of 117 perforated cases seventeen died, a mortality of 15 per cent. Of 138 cases with gangrene and no perforation nine died, a mortality of 6.5 per cent. Of 180 suppurative cases without either perforation or gangrene four patients died, a mortality of 2 per cent. Thirty per cent. of perforated, 16 per cent. of gangrenous and 10 per cent. of suppurative cases developed abscesses. Twenty-four per cent. of perforated, 8 per cent. of gangrenous, and 1 per cent. of suppurative developed diffuse peritonitis. The incidence of all complications in perforative cases is 61 per cent., in gangrenous 38 per cent., and in suppurative 22 per cent. It appears from this that the danger of a diffuse peritonitis is greater when there is a perforation than when the inflammation spreads through the appendicular wall, for in the latter case there is a better chance of the peritoneum localizing the disease. There were twenty cases, or 4 per cent., in which it was not possible to remove the appendix. All but two of these were in abscess cases. Three of the twenty patients died, a mortality of 15 per cent.

8. **Coagulo Reaction of Syphilitic Serum.**—Uemura is convinced that the coaguloreaction is highly characteristic in the case of syphilitic serum, especially when the elaborated case of syphilitic serum, especially when the elaborate method described by him is applied, and the sources of possible mistakes are avoided. In many cases this test is said to be distinctly superior to the Wassermann reaction. It is hardly probable that the coaguloreaction will finally supersede the Wassermann reaction; but it does seem calculated both to furnish scientific research with valuable data in regard to the transformation of serum as wrought by syphilis, and also to facilitate the diagnosis of doubtful cases of syphilis, possibly also of certain apparently similar conditions.

9. **Nervous Symptoms of Polycythemia Vera.**—Of ten cases observed by Christian, all but two showed very definite nervous symptoms, and in most the nervous disturbances were the chief cause of the patient's discomfort. These symptoms varied in duration from a few days to many years. The most frequent symptoms were headache and dizziness. Other common symptoms were disturbances of vision, such as easily induced fatigue of the eyes, blurring of vision, scotomas often scintillating, transient blindness, hemianopsia, and diplopia. Disturbances of sensation, particularly paresthesia, occurred. In several patients motor disturbances, such as paresis and paralysis, were seen. The case in which these were transient and recurred is of special interest. The nervous symptoms in some of the patients were sufficiently focal in character to lead to the diagnosis of brain tumor. One case was of special interest in this connection, for during a period of ten years, during which the patient was seen repeatedly by ophthalmologists and neurologists, brain tumor often was suggested as the cause of his symptoms, and no one seems to have suspected the polycythemia until he was admitted to the hospital, and even when the blood count was known it was still thought possible that some of the focal symptoms were due to a cerebral tumor.

Heat Stroke.—All patients with a temperature of 103 F. or over were immediately placed in a tub of tap water, the level of which was just high enough to cover the body except the head, which was supported in a hammock packed with ice. Vigorous friction was applied to the entire body by four or more persons; ice was freely added to the water, the friction being constantly maintained; the temperature was taken rectally every minute. When the temperature reached 102 F. the patient was removed from the bath, wrapped in sheets or blankets, and returned to the ward. Generally 102 F. was reached in ten to thirty minutes. When the patients were returned to the wards their temperature usually continued to fall, frequently reaching subnormal—95 to 97 F. Cardiac stimulants were given freely, strychnin, sodium caffein benzoate, digitalis, strophanthus; an ice bag was placed at the head and chipped ice was given by the mouth. For subnormal temperature external heat was applied. For recurrences in temperatures up to 103, cold packs and alcohol sponges were given; above 103 the patient was again given a cold water friction bath. It was observed that recurrent temperatures could not be reduced as easily as the initial high temperature, and in a few instances the temperature continued to rise in spite of prolonged friction in cold water. For restlessness and convulsions sedatives were used; morphin, chloral hydrate, scopolamin, the bromids and mechanical restraints.

13. **Alpha Iodin in Chronic Heart Block.**—During the examination of a case of chronic heart block Blackford and Willius attempted to increase the idioventricular rate by the administration of large doses of alpha iodin, the active constituent of the thyroid which Kendall has isolated recently. The administration of this drug has been followed in four cases by marked improvement in the patients' nutrition, associated with increased ventricular rate and cessation of the Stokes-Adams syndrome, though one patient has since died. One-half milligram alpha iodin was administered daily. Alpha iodin quickens the idioventricular rate in complete heart block. This is followed by marked subjective relief to the patient. The drug must be pushed to the tolerance of the patient and the dose then reduced to the largest amount that can be taken without discomfort. The auricular rate increases much earlier and to a much higher figure proportionately than the ventricular rate.

American Journal of Public Health, Boston

October, VII, No. 10

15 Red Cross and Relief in Civilian Communities. F. R. Johnson, Boston.—p. 803.
16 Simple Medium for Rapid Differentiation of Typhoid and Paratyphoid Bacilli. I. J. Kligler, New York.—p. 805.
17 Large Concentration Camp in Its Relation to Civilian Community. C. E. Simpson, Lowell.—p. 806.
18 Graphical Study of Epidemiology of Poliomyelitis. T. G. Hull, New York.—p. 813.
19 Effect of Atmospheric Conditions on Fatigue and Efficiency. C. E. A. Winslow, New Haven, Conn.—p. 827.
20 Missing Links in Chain of Evidence Concerning Occupational Diseases. W. H. Rand, Washington, D. C.—p. 835.
21 Milking Machine as Factor in Production of Sanitary Milk. G. L. A. Ruehle, R. S. Breed and G. A. Smith, Geneva, N. Y.—p. 840.

American Journal of Orthopedic Surgery, Boston

Octotber, XV, No. 10

22 Place of Orthopedic Surgery in War. J. E. Goldthwait, Boston.—p. 679.
23 *Orthopedic Problems in After-Treatment of Infantile Paralysis. R. W. Lovett, Boston.—p. 687.
24 *Patellar Bone Graft in Excision of Knee. H. P. H. Galloway, Winnipeg, Canada.—p. 704.
25 Injury of Musculospiral Nerve. S. L. McCurdy, Pittsburgh.—p. 711.
26 Infraction of Head of Second and Third Metatarsal Bones; Report of Cases. W. C. Campbell, Memphis, Tenn.—p. 721.

23. **After-Treatment of Infantile Paralysis.**—Lovett believes that if a patient is not paralyzed in all four extremities, as well as back and abdomen, that he can be made to walk in some form or other; that is to say, that if he has one good arm and one leg with some power in it, it does not seem to matter how bad the contractions and deformities may be, so far as walking is concerned, because most of them, except scoliosis, can be remedied so that the patient can get his legs under him. Cases with general involvement of one or both legs, some paralysis perhaps of the abdomen, and perhaps the total loss of one or two muscles, persisting as total paralysis about three months after the attack, belong in the class of possible recovery. The longer tenderness lasts, the more slowly improvement begins, and in these cases the whole scale seems to be set further along. The more erratic and irregular the distribution of the paralysis, the better chance there seems to be for improvement. The most unfavorable cases seem to be those in which there is a pretty complete loss of power on both sides below a definite level. Cases which have a considerable amount of total paralysis persisting after two or three months do not seem, as a rule, to belong in the class of possible complete recovery. Paralysis of the deltoid is a serious proposition, but complete recovery may take place, especially with the use of the platform splint. Paralysis of the abdomen is very frequently overlooked, but, if supported by corsets from the outset, is, in Lovett's opinion, in most cases, amenable to treatment.

24. **Patellar Bone Graft in Knee Excision.**—Galloway uses the patella as a means of assisting fixation and promoting bony union in cases of knee resection. After the joint is exposed a thin flap of bone is raised from the side of each condyle and turned upward, being kept out of the way, if necessary, by a temporary suture or two. Corresponding raw surfaces are created on each side of the head of the tibia, but in the case of this bone the bony flap is immediately cut away. The lower end of the femur and upper end of the tibia are then sawed off in such a plane that when brought together the bones will fit with accurately apposed plane surfaces when the leg is flexed about 15 degrees in relation to the thigh, the direction of the saw cut being further planned so as to secure apposition without any greater lateral deviation of the leg than is present in the sound limb. Only a thin slice of bone should be taken at first, so that the plane of the cut can be altered by the removal of further thin slices should it be found necessary to do this in order to secure an ideal relation of the leg to the thigh. While an assistant steadies the upturned patella by seizing with a lion-jaw forceps the soft tissues in which it is embedded, Galloway next removes the posterior half of the patella with the saw, and a corresponding flat surface is created with the same instrument on the front of the femur and tibia. After bringing the knee into the extended position and accurately fitting the bones together, a small incision is made through the skin on each side of the tibial head, about 1½ inches below the free margin of the bone, through which are driven two 5-inch wire nails in such a direction as to cross each other and nail the bones securely together. The patella is then placed on the bed prepared for it and nailed across the front of the joint, its upper half in contact with the femur and its lower half in contact with the tibia, thus forming a solid bony bridge across both bones. The flaps of bone raised from the femur are then brougth into contact with the raw lateral surfaces on the head of the tibia. With a running suture of catgut, the deeper soft tissues are quickly brought together, the redundant tissues about the center of the flap being removed if found advisable. Plaster is applied to the leg and thigh separately, these two parts of the lower extremity being then connected by three iron brackets which span the region of the joint and permit subsequent dressing if required.

Archives of Diagnosis, New York

July, X, No. 3

27 Study of Vasomotor Efficiency. G. W. Norris and F. F. Lane, Philadelphia.—p. 233.
28 Rachicentesis and Spinal Fluid. J. H. Baraeh, Pittsburgh.—p. 239.
29 Inadequacy of Present Classification of Pulmonary Tuberculosis. W. C. Voorsanger, Los Gatos, Calif.—p. 251.
30 Mechanism of Mental Torticollis. L. P. Clark, New York.—p. 257.
31 Diagnosis and Prognosis of Urinary Stone in Infant and Child. A. N. Collins, Duluth, Minn.—p. 259.
32 Cardiospasm in Infancy. L. Kerr, Brooklyn.—p. 269.
33 Pitfalls in Diagnosis in Pediatric Practice. G. R. Pisek, New York.—p. 275.
34 Therapeutic Diagnosis of Amebic Abscess of Liver. W. Allan, Charlotte, N. C.—p. 281.
35 Turning Test in Appendicitis. S. C. Blaisdell, Brooklyn.—p. 285.
36 Abdominal Pain; Its Differential Diagnosis. R. F. Ives, Brooklyn.—p. 286.

Boston Medical and Surgical Journal

October 4, CLXXVII, No. 14

37 Treatment of Gastric Hyperacidity and Hypersecretion. W. F. Boos, Boston.—p. 469.
38 *Cerebrospinal Fluid in Anterior Poliomyelitis; Report on One Hundred and Eight Cases. W. Overholser, Westboro.—p. 480.
39 Dr. Samuel G. Howe and Beginning of Work for Feebleminded in Massachusetts. F. E. Williams, New York.—p. 481.
40 Feebleminded as an Element in Poverty. R. W. Kelso, Boston.—p. 484.
41 What it Means to Have Noncommitted Feebleminded in Community. C. C. Carstens, Boston.—p. 487.
42 Plea for Instruction and After-School Care of Feebleminded Deaf. C. A. Yale, Northampton.—p. 490.
43 Defective Girl Who Is Immoral. M. B. Blake, Boston.—p. 492.

38. **Cerebrospinal Fluid in Poliomyelitis.**—Overholser found that in the early postparalytic stage of anterior poliomyelitis the spinal fluid usually shows a moderate lymphocytosis and a slight to moderate increase in pressure and in globulin content. Fehling's solution is reduced, but this phenomenon is of little diagnostic value. A reasonably constant curve is yielded by Lange's colloidal gold test; this curve has some value in the differential diagnosis. The picture is only fairly constant, and in the absence of positive clinical findings does not justify a diagnosis.

Illinois Medical Journal, Chicago

October, XXXII, No. 4

44 Advisability of Prostatectomy in Presence of Cord Lesion. E. S. Judd and W. F. Braasch, Rochester, Minn.—p. 229.
45 Our State Hospitals' Straits. S. D. Wilgus, Rockford.—p. 233.
46 Is Nitrous Oxid Oxygen Gas in Labor Dangerous to Babies? R. R. Ferguson, Chicago.—p. 242.
47 Physician and Public Health. W. E. Park, Rockford.—p. 245.
48 Practical Methods of Sewage Disposal. E. Bartow, Urbana.—p. 248.
49 Hygiene of Pregnancy. E. V. Davis, Chicago.—p. 250.
50 Duty of State to Choreic Child. C. B. King, Chicago.—p. 253.
51 Etiology of Poliomyelitis. J. W. Nuzum, Chicago.—p. 254.
52 Epidemiology of Poliomyelitis. C. W. East, Springfield.—p. 256.
53 Duties and Problems of Secretary of Active County Medical Society. T. G. McLin, Jacksonville.—p. 259.
54 Medical Legislative Work in Illinois. D. W. Deal, Springfield.—p. 261.
55 Organization of Medical Legislative Work in County Society. F. C. Gale, Pekin.—p. 264.
56 Syphilis Among Admissions to Elgin State Hospital. E. W. Fell, Elgin.—p. 267.
57 Studies in Meningitis. A. Levinson, Chicago.—p. 270.

58 Why Do We Have Recurrences After Operations on Biliary Tract. D. N. Eisendrath, Chicago.—p. 272.
59 Postoperative Meningeal Hemorrhage. G. W. Green and J. J. Moore, Chicago.—p. 278.
60 Blood Pressure Again. J. Sherlaw, Chicago.—p. 281.
61 Urinary Abnormalities Among Insane. H. T. Child, Kankakee. —p. 287.

Journal of Abnormal Psychology, Boston

August, XII, No. 3

62 Theories of Freud, Jung and Adler. Work of Sigmund Freud. J. J. Putnam, Boston.—p. 145.
63 Notes with Reference to Freud, Jung and Adler. T. Burrow, Boston.—p. 161.
64 Adler Concept of Neuroses. W. A. White, Washington, D. C. —p. 168.
65 Some Criticisms of Freudian Psychology. R. S. Woodworth, New York.—p. 174.
66 Need for Stricter Definition of Terms in Psychopathology. M. Solomon, Chicago.—p. 195.

Journal of Bacteriology, Baltimore

September, II, No. 5

67 Preliminary Report of Committee of Society of American Bacteriologists on Characterization and Classification of Bacterial Types. C. E. A. Winslow and others.—p. 505.
68 Counting Living Bacteria in Milk; Practical Test. W. D. Frost, Boston.—p. 567.
69 Bacterial Metabolism of Sulphur. Formation of Hydrogen Sulphid from Certain Sulphur Compounds under Aerobic Conditions. F. W. Tanner, Urbana, Ill.—p. 585.

Journal of Laboratory and Clinical Medicine, St. Louis

September, II, No. 12

70 *Operative Treatment of Peripheral Nerves After Severance, More Particularly After Loss of Substance—Critical Review. G. C. Huber, Ann Arbor, Mich.—p. 837.
71 *War Deafness and Its Prevention—Critical Review. S. R. Guild, Ann Arbor, Mich.—p. 849.
72 *Fourth Venereal Disease—Erosive and Gangrenous Balanitis. R. G. Owen and F. A. Martin, Detroit.—p. 862.
73 *Possible Explanation for Cyanosis and Hyperpnea Seen in Pneumonia and Cardiac Decompensation. R. G. Pearce Cleveland. —p. 867.
74 *Experimental Asthma in Guinea-Pig. H. Sewall, Denver.—p. 874.
75 Cases of Chronic Infection Apparently Focal in Gallbladder. P. G. Woolley, Cincinnati.—p. 883.
76 *Acute Death from Chlorin Poisoning. O. Klotz, Pittsburgh.— p. 889.
77 *Blood Picture Following Experimental Splenectomy. T. G. Orr, Rosedale, Kan.—p. 895.
78 Review of Mosenthal's Work on Measurement of Renal Function. C. D. Christie, Cleveland.—p. 899.
79 Thermostat for Water Bath. H. J. Breuer, Lincoln, Nebr.—p. 906.

70. **Surgery of Peripheral Nerves.**—Huber says that the question of using autotransplants or homotransplants of nerve segments in preference to heterotransplants, in clinical cases, on the basis of experimental and clinical observations can be decided in favor of autotransplants or homotransplants in case suitable fresh nerves from man are available at the time of the projected operation, but it should be borne in mind, that especially in secondary operations for loss of nerve substance, both the time of the operation and the method used are often a matter of choice. Heterotransplants, transplantation of nerve segments taken from an animal of another species than the one to which the transplant is made, is an operation not to be wholly condemned, since clinical observations and experimental work both justify this operation. Both clinical and experimental observations warrant the deduction that the operation of choice in cases of repair of an injured peripheral nerve, where direct suture cannot be obtained, is the operation of nerve transplantation, especially if autotransplants or homotransplants are available. This may be combined with tubulization by means of fascial sheaths or hardened arteries. Of the methods of tubular suture and tubulization, hardened arteries and tubes of fascia are to be given preference. Experimental observations with other methods do not warant their recommendation.

71. **Prevention of War Deafness.**—The issuance and compulsory use of some preventive, even if it be nothing more than cotton with petrolatum, Guild says, is in the interests of efficiency in the army and of economic importance. Even such small things as ear plugs are of importance if they can serve to keep trained men in active service. The providing of preventives should not be left to the individual soldier. Nor should such preventives as we have be issued only "when demanded" and to those few who realize the danger and know of the preventive, but they should be issued like clothing, rations, ammunition and other equipment; to all the troops, officers and men alike, and their use not left optional but made compulsory when going into action. Like any other preventive, the object of their use is to keep the active service list up and the hospital list down. Guild believes that the increased efficiency of an army using plugs would be many times greater than the cost of the plugs; they would be one of the smallest expense items of all the equipment of a soldier, and the bulk of even large numbers would not be a very noticeable factor in the problem of transporting supplies.

72. **Gangrenous Balanitis.**—The six cases cited by Owen and Martin were examined within one to three days after the sore appeared, all being in the erosive stage, with an abundant discharge of foul pus, moderate edema with slight phimosis, and exquisitely tender ulcers, the largest sore being about the size of a dime. The ulcers were covered with pus and considerable coagulated serum and exudate, beneath which lay a very superficial reddish colored erosion. All showed moderate inguinal adenitis, painless in character. There were no constitutional symptoms. In all of these cases the sore had appeared within four days after exposure. One patient with a history of repeated exposures, but denying coitus in os showed *Spirochaeta pallida*, as well as the organisms characteristic of this condition. This case cleared up promptly under salvarsan and local treatment with hydrogen peroxid. Three other cases treated with wet dressings of hydrogen peroxid cleared up within a few days. The remaining two patients were advised to use the same treatment, and presumably cleared, as they failed to return to their attending physician.

73. **Cyanosis and Hyperpnea Seen in Pneumonia.**—Pearce points out that the percentage of carbon dioxid in the alveolar air is not a good guide as to blood acidosis, at least in cardiac disease, pneumonia and congenital heart disease. In the cardiac case a low carbon dioxid alveolar air pressure is a result of the attempt of the respiratory center to prevent its venous carbon dioxid pressure from being unduly raised because of the slow circulation. In pneumonia and congential heart disease, the respiratory center reacts to keep the arterial blood at a normal carbon dioxid tension.

74. **Experimental Asthma in Guinea-Pig.**—It has been shown by Sewall that guinea-pigs, especially after previous sensitization, may react to intranasal instillation of horse serum by the development of respiratory seizures which have the essential characters of bronchial asthma. In some cases an apparent immunity of the respiratory apparatus may be developed while general hypersensitiveness still remains, as proved by the fatal effect of intravenous injection of serum. In most cases the hypersensitiveness of the respiratory apparatus, once acquired, tends eventually to return, at least through a period of thirteen months. Small nasal instillations of serum, 0.04 c.c., not themselves usually capable of inducing asthmatic paroxysms, apparently have a distinctly inhibiting effect on the development of asthma by large instillations, 0.2 c.c., which themselves tend to maintain hypersensitiveness and override resistance. It is an opinion supported by many additional observations, that serum is actually absorbed by the mucous membrane of the nose whenever placed in contact with it and that the immunologic reactions are internal to the surface. The conclusion, emphasized in other papers is here strengthened that in therapeutic prophylaxis better results may probably be expected by choosing a dosage of antigen which just fails to produce an obvious reaction than by one which entails a marked disorder.

76. **Acute Death from Chlorin Poisoning.**—The acute reaction found by Klotz in the lungs of animals exposed to chlorin consisted mainly in an intense congestion with edema and capillary thrombosis. Animals surviving a longer period showed a pulmonary infiltration of inflammatory cells mainly lymphocytes. The acute capillary thrombosis appears of importance in the acute deaths when the concentration of the gas is great. The intense pulmonary edema obtained by

abstracting a thin serum from the pulmonary blood vessels causes an alteration in the quality of the blood and an increase in its viscosity. This dense blood tends to clot spontaneously and is also influenced in this more rapid clotting by the presence of chlorin within the lung. These two factors, increased viscosity and capillary thrombosis, impede the ready flow of blood through the lung and lead to a fall in the arterial blood pressure. Thus, acute chlorin gassing differs materially from other forms of asphyxia.

77. Blood Picture Following Experimental Splenectomy.—In a series of twelve rabbits Orr succeeded in producing an anemia by splenectomy which had a duration of sixty or more days, after which time the red blood count and hemoglobin returned to normal. No definite change was produced by splenectomy in the platelet count and coagulation time. Changes in the total white cell count produced by removal of the rabbit's spleen were not constant. The same conclusion applies to the elements in the differential counts, with the exception of the large mononuclears, which were increased in every instance after splenectomy.

Kentucky Medical Journal, Bowling Green

October, XV, No. 10

80 Combinations, Mixtures and Sequences of Anesthetics. W. H. Long, Louisville.—p. 454.
81 Oral Sepsis from View Point of Pediatrist. E. M. Tarr, Boston. —p. 458.
82 How School Teachers Can Benefit Physicians. E. McKendrie, Bardwell.—p. 461.
83 Thyroid. U. V. Williams, Frankfort.—p. 462.
84 Treatment of Menorrhagia and Metrorrhagia. J. F. Dunn, Arlington.—p. 464.
85 Treatment of Tuberculosis in Private Home. W. L. Tyler, Curdsville.—p. 465.
86 Report on Use of Carrel-Dakin Solution. F. Stites, Jr., Hopkinsville.—p. 467.
87 Classification of Anemias with Special Reference to Differential Diagnosis and Treatment of Addison-Biermer Type. R. L. Bone and A. L. Thompson, Madisonville.—p. 468.
88 Typhoid. J. B. White, Cave City.—p. 472.
89 Medicine of Future. W. J. Gerding, Newport.—p. 473.
90 Progress of Internal Medicine During Year 1916. E. B. Willingham, Paducah.—p. 473.
91 Beriberi or Endemic Multiple Neuritis; Report of Twenty-One Cases. F. M. Travis, Eddyville.—p. 476.
92 Fibroid Tumors. A. W. Cain, Somerset.—p. 483.

Maine Medical Association Journal, Portland

September, VIII, No. 2

93 Experience in Base Hospital in France. E. Nichols, Boston. —p. 31.
94 Medical Preparedness. W. L. Cousins, Portland.—p. 43.

Medical Record, New York

October 6, XCII, No. 14

95 Critical Analysis of Treatment of Tuberculosis with Copper and Potassium Cyanid. G. H. Evans, San Francisco.—p. 575.
96 Plea for Greater Exactness in Diagnosis and Treatment of Tuberculosis. R. C. Newton, Montclair, N. J.—p. 580.
97 Lesions of Posterior Urethra; Their Symptomatology, Diagnosis and Treatment. E. M. Watson, Buffalo.—p. 583.
98 Splenic Reflexes of Abrams in Diagnosis and Treatment of Syphilis. A. Abrams, San Francisco.—p. 586.
99 Necessity of Further Administrative Control of Scalp Diseases in Children and Adults. W. A. Manheimer, New York.—p. 587.
100 Treatment of Lobar Pneumonia. M. F. Morris, Jr., Chelsea, Mass. —p. 589.
101 Seventeen Cases of Goiter Treated with Injections of Phenol, Iodin and Glycerin. J. E. Sheehan, New York.—p. 591.
102 Five Cases of Acute Streptococcic Infection. E. G. Zimmerer, Lincoln, Nebr.—p. 592.
103 Hot Air and Calomel Vapors in Treatment of Catarrhal Deafness and Other Mucous Membrane and Systemic Conditions. E. J. Brown, Minneapolis.—p. 593.

New York Medical Journal

October 6, CVI, No. 14

104 Aspiration or Vacuum Suction Apparatus. R. C. Myles, New York.—p. 629.
105 Etiology and Treatment of Frequency of Urination in Women. W. E. Stevens, San Francisco.—p. 630.
106 Vital Statistics. W. H. Guilfoy and E. W. Kopf, New York.—p. 633.
107 Modern Children's Clinic of Outpatient Department. C. Herrman, New York.—p. 636.
108 Typhoid Appendicitis. E. W. Skelton, New York.—p. 638.
109 Intubation in Diphtheria. A. J. M. Treacy, Philadelphia.—p. 643.
110 Serum Disease, Anaphylaxis and Allergie. F. E. Stewart, Philadelphia.—p. 644.
111 Urticaria. O. Joerg, New York.—p. 647.

Ophthalmic Record, Chicago

October, XXVI, No. 10

112 Hemianopsia. R. I. Lloyd, Brooklyn.—p. 491.
113 Acute Pneumococcus Conjunctivitis with Complications and Fatal Termination from Meningitis. R. R. Brownfield, Phoenix, Ariz. —p. 516.
114 Habitual Use of Spectacles. An Insurance against Traumatism Rather than a Risk. H. Gifford, Omaha.—p. 519.

Rhode Island Medical Journal, Providence

October, I, No. 10

115 Medical Officers' Reserve Corps. H. D. Arnold.—p. 205.
116 Organization of Dispensary Services of Second Naval District. D. N. Carpenter.—p. 208.

South Carolina Medical Association Journal, Greenville

September, XIII, No. 9

117 Some of the Predisposing Influences of Nervous and Mental Diseases. J. F. Munnerlyn, Columbia.—p. 668.
118 Carcinoma of Female Breast. H. S. Black, Philadelphia.—p. 671.
119 Stones in Urinary Tract. E. P. Merritt, Atlanta, Ga.—p. 676.
120 Plea for Local Anesthesia in Major Surgery. J. H. Johns, Westminster.—p. 678.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

September, XXII, No. 4

1 Roentgenology of Os Petrosum. H. W. Stenvers.—p. 97.
2 Method for Rapid Determination of Depth of Foreign Bodies from Roentgen Ray Plates. E. H. Nelthorpe.—p. 113.

British Medical Journal, London

September 15, II, No. 2959

3 *Infective Jaundice. B. Dawson, W. E. Hume and S. P. Bedson. —p. 345.
4 Some Nose and Throat Diseases of Childhood. D. Guthrie.—p. 355.
5 *Combined Vaccination with Multiple Vaccines (Quadruple, Quintuple and Sextuple). A. Vastellani and F. Taylor.—p. 356.
6 *Rupture of Left Bronchus from Trachea. J. Patrick.—p. 359.
7 *Treatment of Vincent's Angina. E. Emrys-Roberts.—p. 360.

September 22, No. 2960

8 *Meningococcus of Weichselbaum. E. C. Hort.—p. 377.
9 *Suitability of More Soluble Salts of Quinin and Cinchonin for Intravenous Injection. L. Rogers.—p. 381.
10 Scabies Problem on Active Service. H. MacCormac and W. D. D. Small.—p. 384.
11 Convenient Method of Preparing Eusol. J. L. Smith, J. Ritchie, and T. Rettie.—p. 386.
12 Carrel-Dakin-Daufresne Treatment. R. M. Rowe.—p. 387.
13 Carrel-Dakin Treatment and Method for Its Application on Extensive Scale. L. Dimond and R. McQueen.—p. 387.
14 Case of Intra-Ureteral Primary Syphilitic Chancre. P. A. Clements.—p. 388.
15 Screen Method of Localization. J. H. Shaxby.—p. 389.

3. **Infective Jaundice.**—It would seem to be proved by the authors that there is in the armies in France a type of infective jaundice which is the same in clinical and pathologic features as that described by the Japanese workers, and that this disease is caused by the *Spirochacta icterohemorrhagiae*. And there is also undoubtedly proof that this same spirochete may cause a similar train of symptoms without the appearance of jaundice. The entire subject of infective jaundice is reviewed by the authors and a complete bibliography is appended to this article.

5. **Combined Vaccination with Multiple Vaccines.**—Tetravaccine No. 1 (T. A. B. C.) prepared by the authors consists of four standardized emulsions mixed together in equal proportions and containing, per cubic centimeter: typhoid, 500 million; paratyphoid A, 250 million; paratyphoid B, 250 million; cholera, 2,000 million. Of this mixture 0.5 c.c. is given under the skin of the arm the first time, and the same or double the amount a week later. Tetravaccine No. 2 (T. A. B. M.) consists of an emulsion in phenolized saline solution (phenol 0.5 per cent., salt solution 0.85 per cent.) of *B. typhosus, B. paratyphosus* A, *B. paratyphosus* B, and *M. melitensis.* After standardizing the four different vaccines and testing their sterility they are mixed together in equal parts. The vaccine will contain, per cubic centimeter: typhoid, 500 million; paratyphoid A, 250 million; paratyphoid B, 250 million; malta fever, 2,000 million. Of this vaccine 0.5 c.c. is injected subcutaneously in the arm, and a week later the same or double the amount is given. Pentavaccine

No. 1 (T. A. B. C. P.) consists of a phenolized saline emulsion of typhoid, paratyphoid A, and paratyphoid B bacilli, cholera vibrios and plague bacilli. The vaccine is standardized to contain, per cubic centimeter: *B. typhosus*, 500 million; *B. paratyphosus* A, 250 million; *B. paratyphosus* B, 250 million; *V. cholerae*, 2,000 million; *B. pestis*, 500 million. Half a cubic centimeter is given the first time and double the amount a week later. Pentavaccine No. 2 (T. A. B. C. M.) is so standardized that each cubic centimeter contains: typhoid, 500 million; paratyphoid A, 250 million; paratyphoid B, 250 million; cholera, 2,000 million; malta fever, 2,000 million. At the first injection 0.5 c.c. is given and the same or double the dose a week later.

Hexavaccine (T. A. B. C. P. M.) consists of an emulsion in phenolized salt solution (phenol 0.5 per cent., salt solution 0.85 per cent.) of *B. typhosus*, *B. paratyphosus* A, *B. paratyphosus* B, *V. cholerae*, *B. pestis* and *M. melitensis*. The combined vaccine is standardized so as to contain, per cubic centimeter: *B. typhosus*, 500 million; *B. paratyphosus* A, 250 million; *B. paratyphosus* B, 250 million; *V. cholerae*, 2,000 million; *B. pestis*, 500 million; *M. melitensis*, 2,000 million. The first time 0.5 c.c. is given and the same or double the amount a week later. The authors point out that the inoculation of the combined vaccines is harmless. The reaction is not severe with the exception of those containing *B. pestis*, but even simple plague monovaccines, whatever their method of preparation, give a severe reaction. It is essential to use in the preparation of the vaccines selected strains of the various micro-organisms which have been found by experience to be rich in antigen. This is especially the case as regards *B. paratyphosus* A and *M. melitensis*, some strains of which are very poor in antigen, and when injected give rise to only a small production of antibodies. Combined vaccines are of practical advantage, especially in the case of troops, rendering possible a contemporaneous immunization for several different maladies; this saves a great deal of time, and the men do not suffer the discomfort of a large number of inoculations. To protect the troops against typhoid, paratyphoid A, paratyphoid B, and cholera with the method of ordinary monovaccines in succession, eight inoculations, at least, were necessary, spread over a period of two months; with the tetravaccine (T. A. B. C.) two inoculations only are sufficient, spread over a period of a week.

6. **Rupture of Left Bronchus from Trachea.**—The injury in this case was caused by a gunner falling from an empty general service limber, whose wheel then passed over his chest. Besides other injuries there was partial separation of the left bronchus from trachea, the tear being through the anterior portion to the extent of two-thirds of the circumference; acute inflammatory reddening of the mucous membrane of both bronchi; inflammatory infiltration of cellular tissue of middle mediastinum; the cartilaginous rings of trachea and bronchi normally flexible and tough. The most striking primary features of the postmortem examination were the profound degree of collapse of the left lung, its acute hemorrhagic state, evidence of the severity of the crushing blow and the acuteness of the pericardial inflammation.

7. **Treatment of Vincent's Angina.**—The treatment used by Emrys-Roberts consists in the local application of the following lotion:

	gm. or c.c.	
Hydrogenii peroxidi	150	ʒ v
Vini ipecacuanhae	12	ʒ iij
Glycerini	15	ʒ v
Aquae .....ad	240	ʒ viij

By its use the gingivitis is usually cured in about six days, while the throat condition clears up altogether in from twenty-four to forty-eight hours.

8. **Meningococcus of Weichselbaum.**—Hort believes he is able to produce direct morphologic evidence that the meningococcus is not a bacterium at all, and that both it and the filterable virus actually represent different phases in the life cycle of an ascomycetic organism which has hitherto been believed to be an involution form of the meningococcus. This communication deals mainly with the morphologic characters of the meningococcus and of its so-called giant forms which represent an ascal stage in the life cycle of an organism allied to the ascomycetes. The ascus may be either large or small, or of any intermediate size (0.2 to 5 microns). The meningococcus of Weichselbaum is an ascospore, derived from the giant meningococcus by a process of endosporulation. Hort says that the true nature of the meningococcus and its alleged giant forms has hitherto been missed because of the practically exclusive use of solid mediums for purposes of identification, and because direct examination of unstained living organisms, including warm stage development in liquid cultures, has not been carried out.

9. **Intravenous Injection of Quinin in Malaria.**—As 3 grains of the bihydrochlorid contain as much quinin as 4 of the acid hydrobromid, after commencing with 0.5 gm. doses to ascertain whether the patient has any idiosyncrasy toward the drug, up to 12 grains of the bihydrochlorid or 16 grains (approximately 1 gm.) of the acid hydrobromid, in 7.5 and 10 c.c., respectively, of normal saline (making practically 10 per cent. solutions), may be given once daily for at least four days. Rogers advises to supplement the intravenous doses with quinin by the mouth, as the former is likely to be rapidly excreted through the kidneys, a point he is now investigating. In any case prolonged oral administration should follow the more active intravenous medication. Once the resistant relapse producing stages of the malarial parasite have been produced, quinin by intravenous administration is not likely to be so effective, but the vigorous treatment of primary attacks of malaria by intravenous quinin appears to be worthy of careful trial to ascertain if the frequency of subsequent relapses can be reduced. A further material advantage of such early intravenous administration is likely to be that dangerously large infections, which may terminate at any moment in fatal coma under oral administration of quinin, are likely to be rapidly controlled, and the present mortality from malaria to be reduced to practically nothing.

Glasgow Medical Journal

September, LXXXVIII, No. 3

16 *Rectal Crises of Nontabetic Origin. A. MacLennan.—p. 129.
17 Plastic Meatotomy. J. L. Hamilton.—p. 132.
18 Inguinal Hernia; Some Comments on Present Views. C. Bennett.—p. 134.

16. **Rectal Crises of Nontabetic Origin.**—Both sexes are liable to these attacks, though, in MacLennan's experience, they occur more frequently in males. It has been observed in ages ranging from 16 to 50. The pain complained of is of the most commanding character; it is located in the sacral region. Tender areas are not associated with the deep seated pain, but, on the contrary, pressure tends rather to give relief. The crisis commonly arises during defecation, especially if accompanied by straining. On the other hand, the patient may be wakened from a sound sleep by the rapidly growing pain. Tenesmus is present, and the act of defecation, though at first it causes an exacerbation of the suffering, results in its cessation. In men the crisis may be accompanied by priapism. When the crisis has reached its zenith the onset of a general tremor or rigor, accompanied by the sensation of cold, is almost invariably followed by a rapid cessation of the pain. The pain may wax and wane, but the most severe attacks are often the shortest. Examination of the rectum during the attack has demonstrated in two cases the presence of a fine fibrillar tremor in the internal sphincter. Piles may be present and undoubtedly enter into the etiology. A severe type of rectal crisis was recently observed after colostomy in a case of inoperable cancer of the rectum. The lesion is a neurosis. In no case examined during the pain has the rectum been found quite empty, and constipation of a minor degree has been the rule. The treatment MacLennan has found most efficacious has been the inhalation of a dozen drops of chloroform placed on a handkerchief.

Lancet, London

September 8, II, No. 4906

19 *Treatment of Chest Wounds. T. R. Elliott.—p. 371.
20 Purulent Bronchitis; Its Influenzal and Pneumococcal Bacteriology. A. Abrahams, N. F. Hallows, J. W. H. Eyre and H. French.—p. 377.

21 *Trench Fever, Associated with Presence of Hemogregarine. L. Dimond.—p. 382.
22 Case of Influenzal Meningitis. K. S. Bhat.—p. 384.
23 Case of Periodic Attack of Pyrexia. R. V. Solly.—p. 386.
24 Case of Advanced Multiple Brain Softening. T Walmsley.—p. 387.
25 Case of Chickenpox Simulating Smallpox. F. C. Poynder.—p. 388.
26 Case of Malaria Acquired in England. S. C. Biswas.—p. 388.
27 Studies in Anatomic Nomenclature. W. C. Morton.—p. 398.

19. **Treatment of Chest Wounds.**—The chief practical points emphasized by Elliott are the following: A sterile hemothorax of moderate size, that is, of about 30 ounces, will recover as rapidly by natural absorption as by aspiration. The retention of foreign bodies in the chest in aseptic cases does not appear to exert any crippling effect for military service, but more accurate information is urgently needed on this point. Cases of infected hemothorax that have been drained in France and the patients transferred to the united kingdom, generally recover rapidly and completely. None die and subsequent operations are rarely needed. More than one-half of these empyema patients can be returned to duty. The late mortality from chest wounds is practically nothing in England, and it is only 5 per cent. on the lines of communication in France; but in the area of the armies it is higher than was at first supposed. About 10 or 15 per cent. may die in medical units at an early date from the severity of the injury and about 10 per cent. may die later at the casualty clearing stations from complicating sepsis. Among those casualties in which sepsis is developed within the chest the mortality is very high, rising to nearly 50 per cent. under the present system of treatment by rib resection and drainage. The old conservative routine of surgical nonintervention, except by late drainage, finds its justification only in the satisfactory recovery of those cases of gunshot wound of the chest which remain noninfected, that is, about 75 per cent. The high mortality in those patients who develop sepsis demands a wider practice of the new prophylactic method of cleansing operation performed at an early hour on certain carefully chosen groups of patients.

21. **Trench Fever Associated with Hemogregarine.**—The presence of a small hemogregarine, resembling in many respects the *Hemogregarina gracilis* found by Wenyon in a lizard host, has been noted by Dimond in the venous blood, the blood from the liver, spleen and lung punctures in twelve cases of trench fever. The fact that this protozoon of trench fever is a hemogregarine suggests the extreme probability that the *Pediculus corporis*, or what is even more likely, that a louse allied to the *Hematopinus stephensi* and parasitic on the Indian field rat, is the carrier of the protozoon. The presence of such large numbers of rats in the trenches, which come into close association with the troops seems to favor this conclusion. An effort is being made to trace out the cycle of sporogony in the stomach cells of the different types of lice commonly present in the underclothing of soldiers.

Medical Journal of Australia, Sydney

August 25, II, No. 8

28 Broken Hill Epidemic. G. H. Burnell.—p. 157.
29 Cases of Perforated Gastric and Duodenal Ulcers. D. Kelly.—p. 162.
30 Case of Splenectomy for Splenic Anemia. H. Bullock.—p. 163.
31 Differential Diagnosis and Pathology. P. E. W. Smith.—p. 164.

September 1, No. 9

32 Fractures. R. H. Russell.—p. 177.
33 Case of Fracture of Skull. A. Aspinall.—p. 183.

September 8, No. 10

34 Clinical Treatment of Syphilis in Australian Army. H. H. Griffith.—p. 197. To be continued.
35 Diagnosis, Prophylaxis and Treatment of Plumbic Ocular Neuritis Among Queensland Children. J. L. Gibson.—p. 201.
36 Case of Tetania Parathyreopriva Complicating Pregnancy. J. D. Herlihy.—p. 204.

Archives Médicales Belges, Paris

August, LXX, No. 8, pp. 673-792

37 *War Surgery from Paré to Carrel. F. Helme.—p. 673.
38 *Epinephrin in Addison's Disease. P. Nolf and H. Fredericq.—p. 691.
39 *The Functioning of the Suprarenal Capsules in Infections. N. Goormaghtigh.—p. 697.
40 *Treatment of Relapsing Fever. de Ruddere.—p. 710.
41 Present Status of Opinion in Respect to Soldier's Heart. Wybauw.—p. 714.
42 The Conclusions Voted by the Conférence Chirurgicale Interalliée in relation to Treatment of War Wounds.—p. 769.

37. **The Development of War Surgery.**—Helme traces the history of the care of the wounded in war from Paré in the sixteenth century to Carrel in the twentieth. His quotation from Paré's book, published in 1545, reads as if it might have been written last week: "When I hear people speak of the weapons and war machines that used to be used in battles and in taking towns, they seem like children's toys in comparison to those that are being used today, which surpass in size and cruelty all that one could imagine of the most cruel." Mines, counter mines and grenades were already in use then, and wounds were dressed with boiling oil. Paré, the young barber-surgeon, used cool turpentined oil instead of boiling oil, in the numerous campaigns which he accompanied. Vesalius was about the same age at the same time and served in the enemy army. Each at the age of 28 published an epoch-making work, Vesalius breathing new life into anatomy and Paré creating surgical anatomy and introducing the ligation of vessels to arrest hemorrhage after an amputation. Before him, the bleeding vessels had been seared with a hot iron. Without any knowledge of the principles of antisepsis, he applied antisepsis in treatment of wounds, and his mixture of brandy, salt and water is not unlike the hypertonic solution which some advocate now for dressing wounds. Paré lived to be 80, serving four kings and tending thousands of soldiers in more than 100 battles. His work was translated into four other languages but, notwithstanding this, his influence on military surgery nearly all died with him. Only one principle survived, namely, the importance of avoiding delay before the wounded get surgical care. Larrey and Percy insisted on this principle in Napoleon's campaigns and preached "Operate quickly, operate thoroughly, and watch over the general condition as well as the local." The next great advance, Helme declares, was when Carrel showed how to ward off secondary infection and suture the wound early. He adds: "Carrel seems to have inherited in his fingers the delicate touch of his forebears, silk weavers of Lyons. After four years of intern service at Lyons and a term as prosector of anatomy, he spent several years at Chicago and then entered the Rockefeller Institute at New York where his leading idea—to perfect the surgery of the lungs—drew him on through the various phases of suturing of blood vessels, and means to stimulate healing, to his final successful technic, the secondary suture, which Professor Depage regards as the greatest discovery that has been made in surgery since Lister."

38. **Epinephrin in Addison's Disease.**—The case of Addison's disease described by Nolf and Fredericq is exceptional only in the extreme tolerance of the patient for epinephrin. The man of 38 with grave symptoms of suprarenal insufficiency was given 10.5 mg. epinephrin in four and a half hours; this included 2 mg. subcutaneously and 8.5 mg. intravenously. No sugar appeared in the urine and the blood pressure was not brought up quite to the normal figure even with this. The following days 6 and 4 mg. were given. There were no signs of intolerance at any time, even though to attain the desired therapeutic result these large doses were found necessary. The case teaches that we need not shrink from large doses of epinephrin in emergencies, as with acute suprarenal insufficiency under chloroform, or with gaseous gangrene or other hypotony of infectious origin. By watching over the blood pressure as the epinephrin is being taken, we can continue it and push it until the arterial pressure is brought up to a point where the functioning of the organs is possible once more.

39. **Suprarenal Functioning During Acute Infections.**—Goormaghtigh has been systematically investigating what occurs in the suprarenals under the influence of a general infection, before actual pathologic changes become installed. He examined seventy suprarenal capsules taken from the cadaver from fifteen to sixty minutes after death. This research demonstrated among other things that the supra-

renals show macroscopic changes during the course of infectious processes complicating war wounds, more than any other organ in the body. The suprarenals become turgid, the surface grows redder, a bright red or a brownish or sepia red, while the organ increases in weight. From the very incipiency of the infection, the cortex pours out into the blood stream its reserve of cholesterol and proceeds to secrete more. In grave infections, terminating fatally in two or three days, all the reserves are exhausted. The secretion of new lipoids is activated. With infectious processes running an average of ten or twenty days, the suprarenals develop pathologic lesions, the most important of which seems to be the atrophy of the fasciculated zone. The glomerular zone seems to reenforce or substitute the functioning of this zone. Its task seems to be the collection from the blood of the materials necessary for the production of cholesterol. The other zones show signs of secretory hyperactivity. In infectious processes of slow development, the parenchyma of the gland becomes hypertrophied. The data presented apparently demonstrate a close analogy between the mechanism of the secretory processes in the suprarenals, corpora lutea, and the interstitial gland of the ovaries. The epinephrin-secreting medullary substance of the suprarenals is stimulated to enhanced secretion by the infection. The morphologic evidence of this hyperactivity is the pronounced differentiation of its constituent elements. In some cases this excessive activity completely exhausts this portion of the gland. In conclusion he reports that injection of epinephrin in the course of infections notably augments the activity of the medullary parenchyma of the gland. Three colored plates illustrate the phases which he describes.

40. **Relapsing Fever in East Africa.**—De Ruddere describes the clinical picture and the complications of relapsing fever as it appeared among the Belgian troops on their victorious march through German East Africa. It affected black and white troops alike. The ticks that transmit this disease are rare in the Belgian Congo but are extremely numerous in German East Africa, especially along the caravan routes. The disease is easily recognized by the frontal headache and pains in the bloodshot eyes. The spirilla are found in the blood during the febrile attack but not at other times. Salvarsan and its substitutes did not seem to have any curative action except at the first attack, but they materially relieved the pain and discomfort at each relapse. The duration and frequency of the attacks did not seem to be modified by them in the least. Iridocyclitis is a comparatively common complication, but this yielded to salvarsan or atoxyl in his experience. One man sucumbed to complicating epistaxis, and in most of the severe cases the heart muscle was modified, the heart sounds duller and the pulse small and fast during and between the relapses. There may be ten or fifteen relapses of tick fever, and the men are sick with it for a total of rarely less than three months.

Journal de Médecine de Paris

XXXVI, No. 5, pp. 87-100

43 *Influence of Colored Light on Flies. C. Galaine and C. Houlbert.—p. 95.

No. 6, pp. 101-120

44 *The Danger from Preservatives in Foods. A. Satre.—p. 107.
45 Extraction of Projectiles Under Screen Control. F. Bec and P. Hadengue.—p. 109.
46 Appendicitis in Five of Eight Children in Family with Inherited Syphilis. Gaucher and Brenet.—p. 110.
47 Strophanthus in Treatment of Cardiac Insufficiency. Vaquez and Lutembacher.—p. 110.
48 *Silent Peritonitis and Sudden Death. J. Minet.—p. 112.
49 Importance of Lip Reading for the War Deaf. Lannois and Chavanne.—p. 114.

No. 7, pp. 121-140

50 Historical Sketch of Suture Procedures for Wounds of the Intestines. A. Satre.—p. 127.
51 The Diet for Diabetics. Nigay.—p. 128.
52 Quinin Intravenously in Treatment of Malaria. F. Barbary.—p. 130.
53 Treatment and Prophylaxis of Trench Foot. V. Raymond and J. Parisot.—p. 131.
54 *Hot Drinks and Hot Foods as Factor in Stomach Troubles. A. Manquat.—p. 133.
55 *The Antirat Campaign. A. Calmette.—p. 137. Commenced in No. 6, p. 115.

43. **Flies and Colored Lights.**—From the research by Galaine and Houlbert it seems evident that flies are able to see only white light. All rays outside of the range from green to orange fail to act on their eyes, and are perceived as darkness. In a room lighted through light blue glass the flies behaved as in the dark. Flies avoid rooms lighted through stained glass as if the rooms were dark.

44. **Preservatives in Foods.**—Satre remarks that the substances added to foods to prevent fermentation before they are eaten, prevent it also after they are eaten, so that the food is unable to be subjected to the normal digestive changes in the alimentary tract. The person thus suffers from defective digestion, while the liver and kidneys may be gradually affected by the minute doses of the preservative. The diagnosis is extremely difficult unless a whole group of persons eating the same food develop parallel dyspepsia, etc. Differential diagnosis may be difficult, even with such an easily suspected drug as arsenic ingested in minute amounts over long periods. The new-born, the elderly, and pregnant women are particularly sensitive. The infant gets salicylic acid in its breast milk if the mother is getting salicylic acid as a preservative in some article of food. If brought up on the bottle, its digestive functioning may be upset by the preservatives added to the cow's milk, or sodium bicarbonate or other substance used in cleaning the bottles. In the elderly, as the kidneys grow less permeable, the preservatives ingested in food are retained and pile up in the body. The kidney is also less permeable in the pregnant woman, and retained accumulating antiseptics have a directly injurious action on both herself and the fetus. Satre adds that as all questions connected with food are particularly grave now and pressing for solution, legislation in behalf of pure food, free from adulterations and preservatives, is of paramount importance now.

48. **Silent Peritonitis and Sudden Death.**—Minet reports three cases of sudden death in supposedly quite healthy soldiers. Death occurred in bed at night, and in each case necropsy revealed acute peritonitis, the sudden death being the first appreciable manifestation. One of the men had been kicked in the abdomen four days before and had fainted at the time, but then had apparently felt no further disturbance. Death came with absolute suddenness in each case.

54. **Hot Foods as Factor in Dyspepsia.**—Manquat relates various experiences which converted him to the opinion that in a very large proportion of cases dyspepsia and aerophagia are brought on and maintained by the habit of taking beverages and food too hot for the tissues to bear without injury. This is particularly the case with hot soups, tea, etc., taken on an empty stomach. The hot fluid passes so rapidly through the mouth that the buccal mucosa is not injured. When the hot drink is taken at the close of a meal, the injury is comparatively slight as the stomach walls are protected by other food. The thermometer will show temperatures of 60 or even 68 C. (140 or 154 F.) in soups and other dishes currently taken, and even higher than this in a baked potato. He found that those dyspeptics accustomed to hot beverages and hot soups usually had long, narrow and sagging stomachs. The stomach is tender under pressure and spontaneously painful at a variable period during digestion. Hypersecretion with varying acidity and constipation are the rule—all indicating a tendency to chronic gastritis. The action of ptyalin on starch becomes reduced at temperatures over 45 C. (113 F.) and pepsin may have a similar temperature range of action. The hand cannot be held in water at 45 C. (113 F.) without modifications in the respiration and the general circulation. These modifications must certainly be more profound when the extensive and delicate mucosa of the stomach is exposed to such high temperatures. In practice, when Manquat has been able to overcome the habit of hot drinks and foods, the dyspepsia improved notably. The symptoms from stagnation in the stomach and the aerophagia were the first to show the benefit. When heat is indicated for the stomach, he adds in conclusion, "apply it to the outside."

55. **The Antirat Campaign.**—Calmette relates that the *Mus rattus* has been known from the earliest historical times, but that the sewer rat was not known in Europe until 1727 when, owing to famine and extensive earthquakes in India, large bodies of sewer rats migrated westward and overran western Europe in a few years. By the end of the eighteenth century public rat-hunts were common; in one month 16,000 rats were killed in one building in France. Calmette reviews the history of the rat further, and shows that it is often responsible for transmission of trichinosis as well as of the plague. Remlinger has also proved the transmission of rabies from dog or cat to man by the bite of rats. He has reported the case of a girl at Smyrna who developed rabies after she had been bitten in the finger by a mouse that had attacked her, in her cellar, without the slightest provocation. Calmette describes the measures adopted in various countries to repress rats, saying that, left unmolested, one couple theoretically would breed 500,000 descendants in two years. Even if only a tenth survive, they form a formidable army. The system of bounties seems to work well, he says. In Stockholm 600,000 rats have been killed. At Odessa 500,000 roubles were appropriated for the purpose, and in the Japanese cities a bounty of 2 or 3 cents is paid. In France, the Danysz virus has been used on a large scale against destructive field mice, but it does not act so well on rats. Numbers have been killed with it but others escape. In the Antilles the mongoos, a weasel-like animal domesticated in India, was introduced to exterminate rats, which it does most effectually. But as it attacks also poultry, etc., its depredations were found worse than those of the rats. Calmette thinks that nonvenomous serpents would be better, such as the boa, which is a great consumer of rats while harmless for man. He adds that in 1909 the British parliament voted measures to promote and regulate the destruction of rats, and he pleads that the French parliament should imitate this example. The profession must educate public opinion to realize the enormity of the economic waste from the depredations of rats, and the dangers to which they expose the land from the murderous epidemics which they transmit.

Presse Médicale, Paris

August 30, XXV, No. 48, pp. 497-504

56 *Recent Progress in the Fight Against Tuberculosis. J. Danysz.—p. 497.
57 Suggestions for Improved Technic for Gynecologic Examination. H. Sosnowska.—p. 500.
58 *Immediate Extraction of Projectiles. J. Fiolle.—p. 501.

September 6, No. 49, pp. 505-512

59 *Representative American Authorities in Medical Hygiene. J. J. Matignon. Title Page.
60 *Alcohol Nerve Blocking in Treatment of Causalgia. Pitres and L. Marchand.—p. 505.
61 *Exercises that Stretch the Sciatic Nerve. G. Roussy, L. Cornil and R. Leroux.—p. 506.
62 *With Active Pulmonary Tuberculosis the Sputum May Contain Tubercle Bacilli from the First. C. Richet, Jr.—p. 508.

56. **The Fight Against Tuberculosis.**—Danysz explains the mechanism of infection by the tubercle bacilli as it differs from other infections. He shows how the special phase of production of antibodies which, in diphtheria, corresponds to immunization and the cure of the disease, in tuberculosis corresponds to the beginning of the pathologic state. In diphtheria it is the excess of toxins, in tuberculosis, the excess of antibodies within the cells which determines the pathologic moment and the lesions. He presents evidence further demonstrating that a certain relative immunity can be realized by bacteriovaccination. This, in connection with the spontaneous cures in certain cases, suggests that it may yet be possible to cure the disease with a combination of vaccination and chemotherapy. But scattered experiences and experiments do not afford an adequate basis for determining the best technic for both. This is a task too vast to be left to isolated establishments. To date, the hospitals, the sanatoriums have not been able to keep the tuberculous long enough and control the results with uniform methods. To realize appreciable progress, experimental and clinical experts must be grouped in establishments for study and cure of tuberculosis, the whole work systematized and endowed, so that every discovery, old or new, can be given a thorough test for its clinical value, under the best conditions for control. These studies will be necessarily long and expensive, but they will prove less expensive in the long run than the present haphazard methods in scattered clinics, etc., without any general direction. We know now that it is possible to render the organism more resistant to contagion, and the task before us is to utilize better the clinical and experimental data already acquired, and to organize new research to clear up certain still obscure points. The services of bacteriologists, chemists, physicians and veterinarians should be organized and correlated, carrying on parallel the study of tuberculosis in both man and cattle.

58. **Immediate Extraction of Projectiles.**—Fiolle follows the path of the projectile in seeking for it, and says that nine times out of ten, it is thus possible to find and remove the missile. He strives to open up and clear out the path down to the projectile without touching it with the fingers. As the path of the projectile has to be cleared out any way, he thinks this is better than cutting down on the projectile where it is shown by the roentgen rays. Béclère advocates the latter. With a little experience, roentgenography can be dispensed with in these immediate operations, with the passage-way of the bullet still gaping or easily permeable.

59. **American Medical Pioneers in Hygiene.**—Among the names mentioned in Matignon's historical sketch of American pioneer work in medical hygiene are besides Gorgas, Reed and Lazear, Capt. E. B. Vedder of beriberi fame, Major F. F. Russell of the army antityphoid vaccination, Gentry and Ferenbaugh who found Malta fever in Texas goats, and Major Hoff and Capt. B. K. Ashford who stamped out smallpox and ankylostomiasis in Porto Rico.

60. **Nerve Blocking in Treatment of Causalgia.**—Pitres and Marchand report that Sicard's method of injecting diluted alcohol into the trunk nerve has put an end to the distressing cases of intense pain, or causalgia, following a war wound. Before this method was introduced, they had numbers of wounded suffering tortures from this cause which they were unable to relieve by any measures. The pains subsided at once on blocking the nerve with alcohol, injecting 60 per cent. alcohol into the nerve above the lesion in the thirty patients given this treatment. Three cases are described in detail to demonstrate that this nerve blocking does not aggravate preexisting motor paralysis or bring on new. On the contrary, when the pain was arrested by the alcohol, certain other disturbances disappeared with it, especially the co-organic paralysis, the nature of which is still a mystery. The causalgia in the first case had persisted for a year, not modified by an operation to free the nerve embedded in cicatricial tissue. The second patient had been wounded in the thigh, and the causalgia accompanied paresis in the domain of the femoral nerve. The femoral nerve was opened up under chloroform and 4 c.c. of 60 per cent. alcohol injected. The pains disappeared at once, and also the paresis but more gradually. Alcohol at 60 per cent. interrupts conduction of sensation but apparently does not modify conduction of motor impulses. Before the nerve blocking there was partial reaction of degeneration, but this gradually became total notwithstanding the conservation of volitional contractility in the muscles involved. In the third case the pains were in the palm although the wound was on the arm. The alcohol was injected in the wrist, but this induced merely a very brief and fleeting relief of the pain. This experience sustains Sicard's directions that the nerve has to be blocked above the lesion to be effectual.

61. **Diagnosis of Sciatica.**—Roussy gives some illustrations showing the attitudes inevitably assumed with true sciatica in doing certain exercises. For example, in trying to bend over and touch the floor, the knees stiff, the knee on the side of the sciatica is necessarily bent, or else the foot kicks out behind. When the patient sits on the floor with legs straight out, the knee on that side is always bent a little, and it cannot be fully extended. Pressure on the knee to extend the limb straight causes a sharp pain in the sphere of the sciatic nerve. Another test is the pain felt when the trunk is bent forward. The trunk has to be kept within a given angle to avoid increasing the pain of the sciatica. This unilateral

Kernig's sign was found positive in 63.6 per cent. of his cases of true sciatica. The standing Lasègue sign was positive in 63.45 per cent. By this term he means the outward rotation of the tip of the foot and the knee on that side as the trunk is bent over, trying to touch the floor, the heels solidly planted, about 20 cm. apart. With true sciatica, squatting does not aggravate the pain, while the simulator goes through much groaning as he assumes a squatting position.

62. **Open Pulmonary Tuberculosis.**—Richet insists that sputum containing tubercle bacilli is the rule with a chronic pulmonary tuberculous lesion in evolution. All such lesions, he declares, are "open" from the first, and hence are contagious from the very first of their infection. Repeated examinations may be necessary to disclose the bacilli.

Progrès Médical, Paris

September 1, XXXII, No. 35, pp. 287-294

63 *Traumatic Asthma. M. Loeper and H. Codet.—p. 287.
64 *The Clinical Picture of Intoxication with Suffocating Gases. P. Voivenel and P. Martin.—p. 288.
65 *Signs of Real and Apparent Death. A. Terson.—p. 289.

63. **Traumatic Asthma.**—Loeper and Codet remark that dyspnea is frequent as a sequel of war wounds of the chest. It is sometimes continuous, sometimes intermittent or brought on by exertion, and it may be of mechanical, nervous or reflex origin from some chronic inflammation or sclerosis of lungs or pleura, or some lesion in the diaphragm or mediastinum. It was observed in about 40 per cent. of their cases of war wounds of the chest from six months to a year or more after the injury. The dyspnea assumed the type of asthma in from 2 to 5 per cent. They describe in detail two typical cases of this traumatic asthma. The paroxysms were accompanied by exaggeration of the oculocardiac reflex and a tendency to nausea and syncope. The wound involved the mediastinum in their cases; in one case, radioscopy revealed the presence of a projectile. In other cases the asthma was brought on by effort, especially marching, or during digestion. In these cases there was some lesion of the phrenic nerve, and hiccup was common. There is likewise a purely nervous dyspnea, a kind of pulmonary epilepsy, they say, which presents all types, from the shortness of breath after exertion to the paroxysmal tachypnea simulating true asthma, an actual respiratory neurosis. Treatment of traumatic asthma is palliative above all. They found belladonna, with atropin, much more effectual than morphin. With it datura or valerian can be associated, and even ipecac during waves of congestion. From the results obtained in some cases, thiosinamin seems to aid in resorption of fibrous tissue.

64. **Clinical Picture with Asphyxiating Gases.**—Voivenel and Martin report that the gases used recently by the enemy in their sector were of the chlorin type, causing corrosion of lung tissue. The men die from subacute edema of the lung causing asphyxiation, as if they were drowning. The men gasp for breath and lean their heads down to let the fluid run out of their lungs, unless the coma is too profound. The blood is black and viscous. Ipecac in large doses (4 or 5 gm. or more) with copious venesections gave remarkable results. They warn against using a mask in giving oxygen in these cases. They gave it by Gréhant's method. The above is the more common type of gassing injury, but some of the men presented what they call the livid type; the face is livid, the lips blanched, the dyspnea intense, but there is no acute edema and few signs on the part of the lungs. The pulse is fast and extremely weak, and there is much agitation and frequent sudden starts. One patient in this group became dazed and apathetic. In nearly all in this group signs of suprarenal insufficiency were pronounced especially white dermographism. These evidences of suprarenal injury suggested epinephrin in treatment, and it proved successful. The manifest suprarenalitis explains further the persisting asthenia in these cases. It was so extreme that even by the end of the week, merely changing from one ward to another sent up the temperature and the pulse grew irregular. The mild forms were of three types; the pulmonary, with spasmodic cough and a few rhonchi but the pulse and general condition good; the gastro-intestinal type, with abdominal and epigastric pains, constipation and nausea; and the nervous type, with headache and backache, muscular weakness and a dazed condition. These various types may be blended. There was no albuminuria even in the severer cases. Once past the second day, the men all recovered. The temperature, pulse and respiration began to return to normal the second or third day and by the fourth or the fifth they persisted normal except that the pulse continued to drop, a bradycardia of 60 or 50 persisting often for three weeks or longer. The men that had been gassed seemed to be peculiarly susceptible thereafter to infections and fatigue.

65. **The Eye Signs of Death.**—Summarized recently when published elsewhere, Abstract 41, p. 1035.

Revue Médicale de la Suisse Romande, Geneva

XXXVII, No. 6, pp. 329-384

66 *Treatment of Leg Ulcers. Cunier.—p. 329.
67 *Experimental Research on the Differential Cell Count of Pleural Effusions in the Tuberculous. J. Golay.—p. 337.
68 *Poisoning from Rhubarb Leaves. Maillart.—p. 344.
69 Treatment of Gonococcus Urethritis. G. Cornaz.—p. 348.
70 Rectoscope with Interchangeable Tubes of Different Lengths. C. Perrier.—p. 354.
71 Case of Fatal Puerperal Infection of Antepartum Origin. C. Waegeli.—p. 355.

66. **Treatment of Leg Ulcers.**—The author of this article, recently deceased, endowed a prize for the best work on treatment of varices presented to the Swiss committee. The canton of Vaud has charge of the prize fund. He combines general medication and a compressing bandage with an antiseptic or aseptic dressing. The leg is wound with a roller bandage, 7 meters long by 10 cm. wide, wound smoothly from the toes to the knee. This bandage is applied in the morning on rising and is changed or taken off at bedtime. To keep this bandage from slipping down, after the bandage has been wound to the ankle, it is brought up slanting to just below the knee before the bandage is folded over, the bulge of the calf thus holding the bandage in place all day. He gives illustrations to show this firm bandage and states that it has to be worn indefinitely to prevent return of the varicose trouble in after years.

67. **Differential Cell Count in Effusions.**—In research on rabbits reported by Golay, he found mononuclears relatively more abundant in the pleural effusion in the tuberculous than in the healthy animals, but the difference is not marked.

68. **Poisoning from Rhubarb Leaves.**—The man of 41, his wife, four children and servants were all taken with violent diarrhea a few hours after having eaten a dish of rhubarb leaves cooked with spinach. All rapidly recovered except the man. He developed acute epithelial nephritis during the following week. Under dietetic measures the symptoms gradually subsided and there was no further trace of albumin in the urine by the twenty-seventh day, and his health has been excellent since.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 23, XXXVIII, No. 67, pp. 921-928

72 *The Ocular Lesions with Diphtheria. T. Di Giuseppe.—p. 921.

August 30, No. 69, pp. 945-952

73 Treatment of Suppurating War Wounds; Necessity for Individualizing. I. Andreoli.—p. 945.

72. **The Ocular Lesions with Diphtheria.**—Di Giuseppe practices in a mountain quarry district where the streets and even some of the houses are hewn out of the rocky mountain side. Typhoid is endemic and other infectious disease flare up in numerous epidemics. In the last fifteen years he has been through five epidemics of diphtheria there, with a total of about 5,000 diphtheria patients in his charge. Among this large number he encountered only five cases with complications on the part of the eyes. They subsided under large doses of antitoxin and local application of the same every hour, although the cornea had ulcerated in three of the cases. In one case the corneal ulceration was so severe that vision was completely lost in that eye. One child had the bilateral diphtheric conjunctivitis with false membranes as the first manifestation of the disease. The other children in the family had

the usual throat localization. In the two other cases of ocular complications there was merely paralysis of the oculomotor muscles, and this did not seem to be influenced by the intensive antitoxin treatment applied, both children being left with squint. The prognosis with oculomotor paralysis should be reserved, as one never knows whether the oculomotor nerve center has been destroyed by the diphtheria toxin or has been merely transiently injured.

Riforma Medica, Naples

September 1, XXXIII, No. 35, pp. 849-868

74 *Effect of Cholesterol in Culture Medium on Development of Germs. L. Manfredi.—p. 849.
75 History of Acromegaly. (Rivendicazioni italiche.) A. Ferrannini. —p. 857.

74. **Cholesterol in Culture Mediums.**—Manfredi reports that addition of 0.5 per thousand cholesterol to the ordinary culture mediums did not seem to affect the development of typhoid and allied bacilli. A larger proportion checked their growth even when the content was less than the cholesterol content liable to be found in the blood in corresponding cases of these diseases. The colon bacillus and the streptococcus of erysipelas and puerperal fever were checked only with proportions over 1 per thousand, and the staphylococcus, diphtheria and cholera germs only with 2 per thousand.

Brazil-Medico, Rio de Janeiro

August 11, XXXI, No. 32, pp. 269-278

76 *The Mortality from Tuberculosis at Rio de Janeiro. P. Barbosa. —p. 269. Commenced in No. 30, p. 251.

August 18, No. 33, pp. 279-286

77 *Ankylostomiasis in the Brazilian Navy. J. Porto-Carrero.—p. 279. Commenced in No. 32, p. 271.
78 Entameba Found in Snake. (Entameba serpentis, n. sp.) A. M. de Cunha and O. da Fonseca.—p. 279.

76. **Tuberculosis at Rio de Janeiro.**—Barbosa remarks that the mortality from tuberculosis at Rio is higher than in the thirty other large cities of the world. It is surpassed only by that of Caracas in Venezuela and Callao in Peru while the climatic and sanitary conditions in these latter cities are far below the level of the Rio of today. The tuberculosis mortality has declined everywhere, and in Rio it dropped from about 12 per thousand inhabitants in 1863 to about 4 since 1903, the variable range since being from 4.61 to 3.83 per thousand inhabitants. Barbosa pleads to have tuberculosis and prophylactic measures against it included in the routine work of the national public health department, with a special chief for the tuberculosis work. He enumerates the measures found useful elsewhere, and urges their adoption, with penalties for promiscuous spitting. He emphasizes that tuberculosis is an epidemic disease and should be handled like all epidemic diseases. The fact that it is chronic instead of an acute epidemic does not alter the threefold principles on which every epidemic should be combated, notification, isolation and sterilization. He insists on compulsory notification but does not approve of relying on terminal disinfection. Yellow fever is almost the only disease with which terminal disinfection is of vital importance, as this kills the infected mosquitoes. Tubercle bacilli, on the other hand, rapidly succumb to air, light and drying. Rio is particularly fortunate in its housing conditions, in comparison to other large cities. There is no overcrowding; the houses have light, air and space in abundance, and there are scarcely any tenements. The high tuberculosis morbidity is due to the unrestricted dissemination of the germs and the low resisting powers of the populace which consists in large proportions of half-breeds who are extraordinarily susceptible to tuberculosis. The excellent housing conditions, the universally recognized authority of the public health service, and the docility of the people render very promising a well planned campaign against tuberculosis.

77. **Hookworm in the Brazilian Navy.**—Carrero protests against recent rumors in regard to the prevalence of disease in the navy, citing his own experience as fleet surgeon for the last six years. Salt water is peculiarly unfavorable for the hookworm and its transmission on ships is exceptional. Among the 6,511 marines and crews stationed at Rio in 1916, there were 214 who were given treatment for hookworm, but he doubts whether in any instance it had been acquired after entering the navy service. Only one of the thirteen patients with malarial polyneuritis had hookworm, and none of the five with beriberi. There was no death attributable to hookworm in the navy. The dispensary for hookworm patients opened in 1915 in the Marine Hospital has had to be closed for lack of patients.

Semana Medica, Buenos Aires

July 5, XXIV, No. 27, pp. 1-28

79 Pathogenesis and Treatment of Cancer. E. Cisneros.—p. 1.
80 Paraffin Film Treatment of Burns. J. M. Jerez and M. E. Jerez. —p. 20.

July 12, No. 28, pp. 29-56

81 Proposed Legislation for Unified Control Over All Public Hospitals, Asylums, Etc., in Argentina. (Asistencia Publica Nacional.) E. R. Coni.—p. 29.
82 *The Balantidium Coli in Argentina. S. E. Parodi, V. Widakowich and R. Borzone.—p. 35.
83 Present Status of Conception of Assimilation. E. Foster.—p. 41.
84 Partial Colectomy for Necrosis. E. Icasati.—p. 45.
85 Experiments in Plasmogenesis. (Recientes conquistas biogenesicas.) V. Delfino.—p. 47.
86 *Ichthyolized Petrolatum for Burns. M. R. Suarez.—p. 48.

82. **The Balantidium Coli in Argentina.**—Parodi and his co-workers report in detail three cases of balantidiosis in persons who had always or for twenty years lived in Argentina. The case histories and the illustrations testify that the *Balantidium coli* is prevalent in Argentina and is liable to induce the same pathologic states as it induces in other countries, and it may breed healthy carriers. Systematic examination of the stools in diarrheas and dysenteries should be the routine practice. The first known case in Argentina was published only last year. Parodi's first case was in a boy of 8. He was apparently healthy, but the stools contained not only the *Balantidium coli* but also the necator, hymenolepis and trichocephalus. Repeated examination showed that the balantidium disappeared from the stools in the course of two weeks. Possibly the exclusive milk and vegetable diet may have contributed to its disappearance. One other child in the family was said to have been having diarrhea for over a year. In the two other cases reported the balantidiosis was very severe; the adult recovered under suppression of meat and treatment with acid enemas and intravenous injections of 0.01 gm. of mercuric cyanid. No specimens of the balantidium could be discovered after the ninth day. The other patient, a boy of 9, died. The parasites had burrowed into the mucosa and induced ulceration at various points. Numerous young forms of the parasite were found close to the edges of the ulcerations, showing that it finds in them specially favorable conditions for reproduction. In each of the three cases the patients had come to the hospital for another cause, treatment of hernia or pleurisy, and the discovery of the parasite was casual. In the first it caused no symptoms; in the second case, periods of tenacious diarrhea alternated with periods of good health. In the third, the toxic necrosis of the bowel proved promptly fatal.

86. **Ichthyolized Petrolatum for Burns.**—Suarez has been using for ten years a 10 or 15 per cent. ichthyolized petrolatum in treatment of burns, and he here expatiates on its analgesic and healing power and the fact that with it the dressings do not stick to the tissues.

Russkiy Vrach, Petrograd

XVI, No. 15, pp. 337-360

87 *Cheese in Dietetic Treatment of Nutritional Disturbances in Infants. V. K. Menshikoff.—p. 337.
88 *Method of Isolating Toxins, Especially Tetanus Toxin. E. S. London and V. M. Aristovsky.—p. 341.
89 *Method of Specific Concentration Applied to the Ferments of the Pancreas. E. S. London and E. P. Pakhotina.—p. 342.
90 Operative Treatment of Prolapse of the Rectum. V. R. Braitseff. —p. 342.
91 The Civilization and Medicine of Ancient Assyria and Babylonia. P. V. Modestoff.—p. 346. To be continued.
92 Cholesterolemia and Its Pathologic Importance. V. N. Kuznetsoff and S. S. Khalatoff.—p. 349.
93 The Physiologic Bases for Electrocardiography and Its Clinical Significance. M. M. Gubergritz.—p. 354. Conclusion.

87. **Cheese in Infant Feeding.**—Menshikoff describes striking results in infant feeding with curds, cheese curds (*tvorog*),

after serious disturbance from too exclusive carbohydrate and salt-containing foods (soups and broths). He gives the full details of seven cases of this type. One child of 19 months, for example, weaned at the twelfth month, had signs of rachitis, with pale, doughy skin, weak pulse, subfebrile temperature, languor and apathy, and cold hands and feet, with diarrheic stools, with mucus content, averaging ten passages a day. There was no albuminuria. Pressure on the ankles left a deep pit. All other feeding was stopped and nothing allowed but rice water with five tablespoonfuls of cheese to the liter as the daily amount. After two days the stools lost their diarrheic character and there were only two passages a day. Then a quarter of the fluid was given in the form of cow's milk, and at once the diarrhea returned, four watery passages a day. The milk was stopped after two days, and the diarrhea subsided. The general condition had much improved by this time, the hands and feet keeping warm. The edema then was gradually thrown off, the weight dropping, and by the end of the week there was no further evidence of the dropsical tendency. Then very slowly and gradually the ordinary diet was resumed, adding to the rice water and cheese small amounts of acorn coffee made with milk, yolk of egg, bread, etc., so that by the end of the month the weight had increased from the original 7,600 to 7,700 gm. notwithstanding the intervening loss of 1,000 gm. as the dropsy was thrown off. The case illustrates the extreme caution necessary in resuming milk, after conditions have been righted under the cheese.

The work issues from the clinic for children's diseases at the University of Kazan, and Menshikoff theorizes to explain the mechanism of this benefit from the cheese with such severe upset of metabolism. He adds that the absence of the salts in the whey of milk, and of carbohydrates, on the one hand, and the predominance of albumin make this method of feeding especially advantageous when there is diarrhea from excessive fermentations in the bowels. In acute upsets of the salt metabolism, with edema in the subcutaneous tissues, any food containing salts and carbohydrates is directly contraindicated. Under the restriction to cheese the dropsy promptly disappears, the tolerance for food is increased, and the normal functioning of the tissues is restored. After the edema has disappeared, food containing salts and carbohydrates can be resumed without bringing back the previous disturbances. The weight drops as the edema subsides, but this loss in weight is not accompanied with collapse and is highly desirable. As there is no further intake of salts on the cheese diet, the source of the edema is removed and there is no return of the edema on resumption of the ordinary diet. One of another group of typical cases of which the details are given was that of a child of 6 months with pronounced atrophy and other indications of nutritional disturbance from too exclusive carbohydrate feeding. It had been taken from the breast four months before and had been fed on milk diluted 2:1, milk gruel and biscuit. It weighed only 4,690 gm. and had long been having ten diarrheic green passages a day, with much gas, and the child was very restless. It was then put on milk diluted with gruel, 1:2, with 4 per cent. sugar. The diarrheic stools continued, and the child was losing rapidly in weight. The next day it was given rice water to 900 c.c. a day, with one dessertspoonful cheese to each 200 gm. By the next day the stools were compact and there was no further loss of weight. In four days the weight had risen to 4,620 gm., and the child seemed quiet and to feel well. Then the diet was changed to 300 gm. milk; 600 gm. of the rice water; six dessertspoonfuls cheese, and 3 per cent. sugar. The stools continued normal, and the weight in nine days had risen to 4,900 gm.

An older child, 2½ years old, had been eating at the regular table but was debilitated by diarrhea for two months and nervous, with attacks of convulsions, and chilliness. After failure of the ordinary measures, he restricted the diet to the rice water with a tablespoonful cheese to each 200 gm., allowing the child as much of this as it cared to take; it took 1,250 gm. per day. By the tenth day the bowel functioning seemed to be normal; during the last week the diet had gradually been enlarged to include bouillon, chops and baked apples. There were no further convulsions and the child seemed in excellent health, having regained nearly its former weight by the end of the second week. In conclusion he expatiates on the advantages of cheese as inexpensive and readily accessible to all, and not requiring clinical supervision. He has repeatedly ordered it for dispensary children. He warns, however, that when the debility from the drain of the diarrhea has reached an extreme degree, so that the child would be unable to stand deprivation of salt from the food, this method of feeding is contraindicated.

88. **Isolation of Tetanus Toxin in Pure Form.**—See Current Comment, this issue.

89. **Isolation of Ferments of Pancreatic Juice.**—See Current Comment, this issue.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

July 28, II, No. 4, pp. 269-348

94 Modern Spiritualism. II. G. van Rijnberk.—p. 272.
95 Leonardo da Vinci's Anatomic Drawings. A. J. P. van den Broek.—p. 277.
96 *Gunshot Fractures of the Femur. L. M. Metz.—p. 284.
97 The Hat as Cause of Baldness. K. G. F. Sloos.—p. 299.
98 Infection of Internal Ear and Meninges After Fracture of Base of Skull. F. H. Quix.—p. 302.

August 4, No. 5, pp. 349-440

99 The Sensation of Pain in Man and Animals. (Voor en tegen proeven op levende dieren.) G. van Rijnberk.—p. 349.
100 *Sensory Metameres in Cat Hind Leg. (De bouw en overdekking der achterpootdermatomen bij de kat.) S. de Boer.—p. 359.
101 *Depressions in the Skull as Symptom of Rachitis: Tri-Bounocephaly. C. A. J. Quant.—p. 371.
102 Case of Sporotrichosis. J. K. W. Kehrer.—p. 386.
103 Deterioration with Age of Scopolamin Solutions. H. Bolten.—p. 390.

96. **War Fracture of the Femur.**—Metz relates his experiences in this line when with the Netherlands ambulance in Silesia where he had seventy cases in his charge. He applied extension by driving a nail into the femur or tibia in thirty-five cases, and never witnessed anything suggesting infection entering through the nail hole.

100. **Segmental Sensory Innervation of the Hind Leg of the Cat.**—De Boer is instructor at the University of Amsterdam and first assistant at the physiologic laboratory. He has previously published research on the segmental innervation from the thoracal portion of the spinal cord. He here reports similar research on the lumbar and sacral cord, defining the segments in the hind leg of cats, and reproducing the dermatomeres in drawings. He never found them alike in any two cats, so he speaks only of averages, not normal standards.

101. **Depressions in the Skull as Sign of Rachitis.**—Quant called attention some time ago to a transverse and a vertical depression in the occipital bone which he found in 60 per cent. of the cases of rachitis examined. These depressions seem to develop more readily with skulls inclined to be long rather than broad. Lying on the side of the head during early infancy seems to increase the chance for this T-shaped depression. It was found in the mild as well as in the severe cases of rachitis, and it may be the first to appear of the signs of rachitis and the last to disappear. This may aid the practitioner in the diagnosis of rachitis. Above and on both sides of the depressions, the skull bone has the normal curve, but, owing to the depressions, the bone looks as if it bulged abnormally on each side and above. This is the reason why this skull anomaly has been called tri-bounocephaly, the three-hill skull, from the Greek term *bounos,* "hill." To detect the depressions on the living child, the head is bent over backward to relax the muscles. The horizontal depression can be most easily determined; drawing the fingers down along the scalp, to the side of the median line, the fingers sink into the transverse depression. There can be no doubt about the gully, as he calls it, as it lies above the point of attachment of the muscles. The finding of the transverse depression is usually enough; the existence of the other may be surmised. In his experience they were always associated. His roentgenogram of one case shows distinctly the long and wide transverse depression and the perpendicular groove with the "three hills" to right, left and above the T. The findings were distinct in 60 per cent. of forty-five rachitic children examined and less distinct in an additional 18 per cent.